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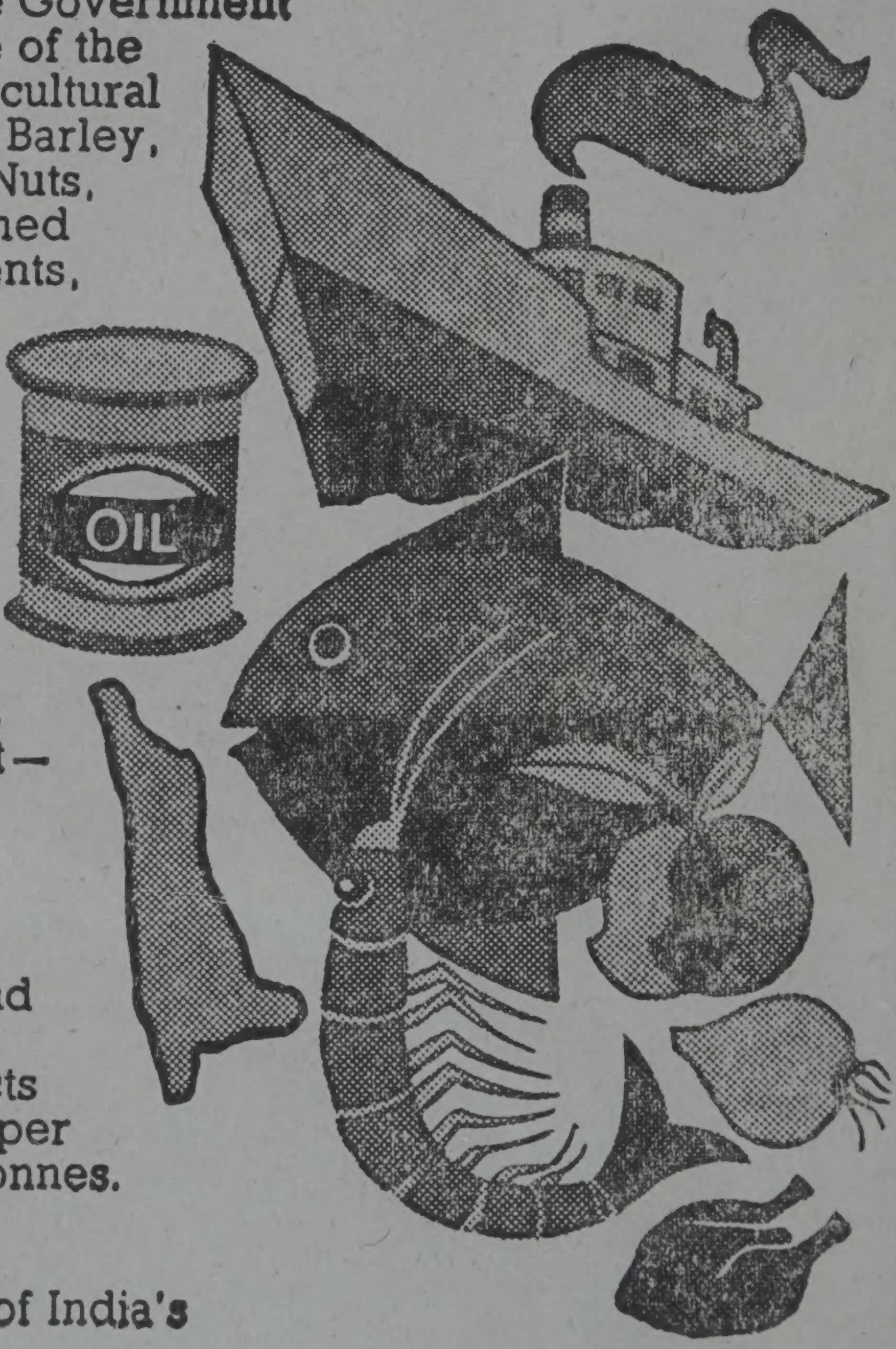

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PREFACE

INDIA 1984 is the thirtieth issue of the Reference Annual, compiled and edited by the Research and Reference Division of the Ministry of Information and Broadcasting. The Annual is a comprehensive book of reference on India's geographic and demographic features; its political structure and economy; its social institutions and culture; and its plans, programmes, activities and achievements in different schemes of socio-economic development.

The publication is useful to all interested in information on India. It is now an established work of reference for scholars, students, officials, journalists, academicians, professionals and others. Each chapter is revised annually; and (within the limits of space) every effort is made to provide information as clearly as possible. However, in the nature of things, a Reference Annual, which takes about ten months from the collection of material to final printing, cannot be completely up-to-date and fully comprehensive.

Broadly, the text covers information up to the end of March 1984 but changes for updating figures and information have been made wherever absolutely necessary. The chapter on Diary of Events covers important happenings during 1983, from January to December.

This year, a new chapter - on Irrigation - has been added. For the convenience of the readers, seeking more details on specific topics, a bibliography is given at the end of the book.

Information in this Annual is compiled from official and other authentic sources with the co-operation of the central ministries/ departments, state governments/union territory administrations and other organisations.

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KEY TO NUMERATION

1 lakh = One hundred thousand
10 lakh = 1 million
1 crore = 10 million
100 crore = 1 billion

1 LAND AND THE PEOPLE

India is the seventh largest country in the world. It is well-marked off from the rest of Asia by mountains and the sea, which give the country a distinct geographical entity. Bounded by the great Himalayas in the north, it stretches southwards and at the Tropic of Cancer, tapers off into the Indian Ocean between the Bay of Bengal on the east and the Arabian Sea on the west. It covers an area of 32,87,263[1] sq km.

Lying entirely in the northern hemisphere, the mainland extends, between latitudes 8°4′ and 37°6′ north and longitudes 68°7′ and 97°25′ east and measures about 3,214 km from north to south between the extreme latitudes and about 2,933 km from east to west between the extreme longitudes. It has a land frontier of about 15,200 km. The total length of the coastline of mainland, Lakshadweep group of Islands and Andaman and Nicobar group of Islands is 7,516.5 km.

PHYSICAL BACKGROUND

The Himalayas and other lofty mountains—Muztagh Ata, Aghil and Kunlun mountains to the north of Kashmir and south eastern portion of Zaskar mountains to the east of Himachal Pradesh—form India's northern boundary, except in the Nepal region. She is adjoined in the north by China, Nepal and Bhutan. A series of mountain ranges in the east separate India from Burma. Also in the east, lies Bangladesh bounded by the Indian states of West Bengal, Assam, Meghalaya, Tripura and Mizoram. In the north-west, Afghanistan and Pakistan border on India. The Gulf of Mannar and the Palk Strait separate India from Sri Lanka. The Andaman and Nicobar Islands in the Bay of Bengal and Lakshadweep in the Arabian Sea are parts of the territory of India.

PHYSICAL FEATURES

The mainland comprises four well-defined regions, namely, the great mountain zone, plains of the Ganga and the Indus, the desert region and the Southern Peninsula.

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[1] Provisional, as on 31 March 1982.

The Himalayas comprise three almost parallel ranges interspersed with large plateaus and valleys some of which, like the Kashmir and Kullu Valleys, are fertile, extensive and of great scenic beauty. Some of the highest peaks in the world are found in these ranges. The high altitudes limit travel only to a few passes, notably the Jelep La and Natu La on the main Indo-Tibet trade route through the Chumbi Valley, north-east of Darjiling and Shipki La in Satluj Valley north-east of Kalpa (Kinnaur). The mountain wall extends over a distance of about 2,400 km with a varying depth of 240 to 320 km. In the east, between India and Burma and India and Bangladesh, the hill ranges are much lower. The Garo, Khasi, Jaintia and Naga Hills, running almost east-west, join the chain of the Mizo and Arakan Hills running north-south.

Plains of the Ganga and the Indus, about 2,400 km long and 240 to 320 km broad, are formed by the basins of three distinct river systems—the Indus, the Ganga and the Brahmaputra. They are one of the world's greatest stretches of flat alluvium and also one of the most densely populated areas on earth. There is hardly any variation in relief. Between the Yamuna at Delhi and the Bay of Bengal, nearly 1,600 km away, there is a drop of only 200 metres in elevation.

The desert region can be divided into two parts—the great desert and the little desert. The great desert extends from the edge of the Rann of Kachchh beyond the Luni river northward. The whole of Rajasthan-Sind frontier runs through this. The little desert extends from the Luni between Jaisalmer and Jodhpur up to the northern wastes. Between the great and little desert lies a zone of absolutely sterile country, consisting of rocky land cut up by limestone ridges. Due to absence of surface water and very scanty rainfall the region is almost absolutely sterile.

The Peninsular plateau is marked off from the plains of the Ganga and the Indus by a mass of mountain and hill ranges varying from 460 to 1,220 metres in height. Prominent among these are the Aravalli, Vindhya, Satpura, Maikala and Ajanta. The Peninsula is flanked on one side by the Eastern Ghats, where the average elevation is about 610 metres and on the other by the Western Ghats, where it is generally from 915 to 1,220 metres, rising in places to over 2,440 metres. Between the Western Ghats and the Arabian Sea lies a narrow coastal strip, while between the Eastern Ghats and the Bay of Bengal there is a broader coastal area. The southern point of the plateau is formed by the Nilgiri Hills where the Eastern and Western Ghats meet. The Cardamom Hills lying beyond may be regarded as a continuation of the Western Ghats.

GEOLOGICAL STRUCTURE

The geological regions broadly follow the physical features and may be grouped into three well-defined regions : the Himalayas and their associated group of mountains, the Indo-Gangetic Plain and the Peninsular Shield.

The Himalayan mountain belt to the north and the Naga-Lushai mountain in the east are the regions of mountain building movement. Most of this area, now presenting some of the most magnificent mountain scenery in the world, was under marine conditions about 60 crore years ago. In a series of mountain building movements commencing about seven crore years ago, the sediments and the basement rocks rose to great heights. The weathering and erosive agencies worked on these to produce the relief seen today.

The Indo-Gangetic plains are a great alluvial tract that separates the Himalayas in the north from the Peninsula to the south. The sedimentary deposits of the tract belong to the latest chapter of the earth's history and conceal beneath them the southern fringes of the Himalayan formations and the northern fringes of the Peninsular formations. The thickness of the sedimentary cover in this tract exceeds 6,000 metres, at places.

The Peninsula is a region of relative stability and rare seismic disturbances. Highly metamorphosed rocks of the earliest periods, dating back as far as 300 crore to 600 crore years occur over more than half of its area; the rest being covered by the coal bearing Gondwana formations, lava flows belonging to the Deccan Trap formation and younger sediments.

The rivers in India may be classified as : (i) Himalayan rivers, (ii) Peninsular rivers, (iii) coastal rivers, and (iv) rivers of the inland drainage basin.

The Himalayan rivers are generally snow-fed and have reasonable flow throughout the year and as such are perennial. During the monsoon months, the Himalayas receive very heavy rainfall and the rivers discharge the maximum quantity of water causing frequent floods. The Peninsular rivers are generally rain-fed and, therefore, fluctuate in volume. A large number of streams are non-perennial. The coastal streams, specially of the west coast, are short in length and have limited catchment areas. Most of them are flashy and non-perennial. The streams of the inland drainage basin of western Rajasthan are few and far between. Most of them are of an ephemeral character. They drain towards the individual basins or salt lakes like the Sambhar or are lost in the sands, having no outlet to the sea. The Luni is the only river of this category that drains into the Rann of Kachchh.

The Ganga basin which is a part of the larger Ganga-Brahmaputra-Meghana basin is the largest in India receiving waters from an area which comprises about one-quarter of the total area of the country. Its boundaries are well-defined by the Himalayas in the north and the Vindhya mountains in the south. The Ganga has two main headwaters in the Himalayas : the Bhagirathi and the Alakananda, the former rising from the Gangotri glacier at Gomukh and the latter from a glacier short of the Alkapuri glacier. The Ganga is joined by a number of Himalayan rivers including the Yamuna, Ghaghra, Goomti, Gandak and Kosi. The western-most river of the Ganga system is the Yamuna, which rises in the Yamnotri glacier and joins the Ganga at Allahabad. Among the important rivers flowing north from central India into the Yamuna|Ganga are the Chambal, Betwa and Sone.

The Brahmaputra and the Barak flowing from east to west in the north eastern region, are international rivers and have immense water resources potential which is still in the initial stages of development.

The Godavari in the southern Peninsula has the second largest river basin in the country covering ten per cent of the area of India. The Krishna basin is the second largest in Peninsular India. The Mahanadi has the third largest basin in the Peninsula. The basins of the Narmada in the uplands of the Deccan flowing to the Arabian Sea and of the Cauvery in the south discharging into the Bay of Bengal are of about the same size, though of different character and shape.

Two other river systems, which are small but agriculturally important, are those of the Tapi in the north and Penner in the south.

CLIMATE

The climate of India may be broadly described as tropical monsoon type. There are four seasons in India : (i) winter season (January-February), (ii) hot weather season, summer (March-May), (iii) rainy season, south-western monsoon period (June-September), and (iv) post-monsoon period, known also as north-east monsoon period in the southern Peninsula (October-December).

In India, rainfall is erratic and ill-distributed. It varies from place to place and year to year. However, there are four broad climatic regions based on rainfall. Practically the whole of Assam and its neighbourhood, the Western Ghats and the adjoining coastal strip and parts of the Himalayas are areas of very heavy rainfall with more than 2,000 mm of annual rainfall. Some places in the Khasi and Jaintia Hills of Meghalaya receive the heaviest rainfall in the world. Cherrapunji gets 11,419 mm of annual rainfall, the highest in the country. In contrast, Rajasthan, Kachchh and the high Ladakh plateau of Kashmir extending westward to Gilgit are regions of low precipitation. They have a yearly rainfall between 100 and 500 mm. Between these rainfall extremes, there are two areas of moderately high and low rainfall ranging from 1,000 to 2,000 mm and 500 to 1,000 mm. The former is a broad belt in the eastern part of the Peninsula, extending northward to the north India plains and the latter runs from the Punjab plains across the Vindhya mountains into the western part of the Deccan extending further south and east of Karnataka and Andhra Pradesh.

While the rainy season in most parts of the country is from June to September, in Tamil Nadu it is during October-December.

FLORA

India with its wide range of climatic conditions—from the torrid to the arctic—has a rich and varied vegetation, which few other countries of comparable size possess. India can be divided into eight distinct floristic regions, namely, western Himalayas, eastern Himalayas, Assam, Indus plain, Gangetic plain, Deccan, Malabar and Andamans.

The western Himalayan region extends from Kashmir to Kumaon. The temperate zone of the region is rich in forests of chir pine, other conifers and broad-leaved temperate trees. Higher up, forests of deodar, blue pine spruce and silver fir occur. The alpine zone extends from the upper limit of the temperate zone to about 4,750 metre or even higher. The characteristic trees of this zone are the high level silver fir, silver birch and junipers.

The eastern Himalayan region extends from Sikkim eastwards and embraces Darjiling, Kurseong and the adjacent tract. The temperate zone of the region has forests of oaks, laurels, maples, rhododendrons, alder and birch; many conifers, junifers and dwarf willows also occur. The Assam region comprises the Brahmaputra and Surma Valleys and the intervening hill ranges. The vegetation is luxuriant with evergreen forests, occasional thick clumps of bamboos and tall grasses.

The Indus plain region comprises the plains of Punjab, western Rajasthan and northern Gujarat. The region is dry and hot and supports scanty natural vegetation.

The Gangetic plain region covers the area from Aravalli ranges to Bengal and Orissa. A greater part of the area is alluvial plain and is under cultivation for wheat, sugarcane and rice. Only small areas support forests of widely differing types.

The Deccan region comprises the entire tableland of the Indian Peninsula, and supports vegetation of various kinds from scrub jungles to mixed deciduous forests.

The Malabar region covers the excessively humid belt of mountain country running parallel to the west coast of the Peninsula. This region, besides being rich in forest vegetation, produces important commercial crops, such as, coconut, betelnut, pepper, coffee and tea. Rubber, cashewnut and eucalyptus trees have also been successfully introduced in some parts of this region.

The Andaman region comprises the Andaman and Nicobar Islands. It abounds in evergreen, semi-evergreen, mangrove, beach and diluvial forests.

The Himalayan region from Kashmir to Arunachal Pradesh through Nepal, Sikkim and Bhutan and Meghalaya, Nagaland and the Deccan Peninsula are rich in endemic flora, *i.e.,* a large number of plants found in these regions are still restricted to these endemic centres and are not found elsewhere. The number of species of flowering plants in the country is about 15,000. There are about 35,000 non-flowering plants in the country.

Flora of the country is being studied in detail by botanists of the Botanical Survey of India (BSI) and some other institutions. The publication of a new *Flora of India* in the form of fascicles has been initiated by BSI and 14 fascicles have so far been published.

Owing to the destruction of forests for agricultural, industrial and urban development, several Indian plants are facing extinction. Samples of some of these rare plants are being preserved in botanical gardens and national parks. Collections of dried samples of these plants are preserved in the Central National Herbarium, Calcutta, the regional herbaria of the BSI and in other research and teaching institutions of the country.

Possessing a tremendous diversity of climate and physical conditions, India has a great variety of fauna. There are about 350 species of mammals and 1,200 species of birds in the country. More than 30,000 different species of insects, apart from a great variety of fishes and reptiles are also found.

The mammals include elephant, associated in India from time immemorial with mythology and the splendour of her regal pageantry, the *gaur* or Indian bison, Indian buffalo, *nilgai, chousingh*a or four-horned antelope (unique to India), black buck or Indian antelope, *ghor-khur* or Indian wild ass (restricted to the Rann of Kachchh) and great one-horned rhinoceros (now confined to eastern India). There are also several species of deer, *viz.,* the rare Kashmir stag, swamp deer, spotted deer, musk deer, *thamin* or brow-antlered deer (found in Manipur) and mouse deer.

Among the animals of prey, the Indian lion is remarkable being the only lion to be found in the world outside Africa. The tiger, which is the national animal, numbers about 3,500. The general decline in its number in recent years has led to the launching of Project Tiger, a scheme financed by the Government to safeguard the tiger, its prey and its habitat, in fifteen selected areas. Among other cats are the leopard, clouded leopard, the snow-leopard and various species of smaller cats.

Several species of monkeys and *langurs* are common. The only ape found in India, the hoolock, is confined to the rain forests of the eastern region. The lion-tailed macaque, with a halo hair around the face, is found in the south.

Bird life in India is very rich and colourful. The peacock is the national bird. Several other birds like the pheasants, geese, ducks, mynahs, parakeets, pigeons, cranes, hornbills and sunbirds inhabit the forests and wet lands.

The rivers and lakes harbour crocodiles and gharials, the latter being the only representative of a crocodilian order in the world. The salt water crocodile is found along the eastern coast and in the Andaman and Nicobar Islands. A project for breeding crocodiles with United Nations Development Programme assistance, started in 1974, has been instrumental in saving the crocodile from extinction and increasing their population to about 3,000. Twelve schemes are in operation in different states for breeding of crocodiles and releasing them in the wild.

The great Himalayan range has a very interesting fauna and include wild sheep and goats, the markhor, the ibex, the serow and the takin. The lesser panda and the snow-leopard are also to be found in the upper reaches of the mountains.

The Wild Life (Protection) Act, 1972, adopted by all the states except Jammu and Kashmir (which has its own Act), governs the wild life conservation and protection of endangered species both inside and outside forest areas. Under this Act, trade in rare and endangered species has been banned.

India is a signatory to the Convention on International Trade in Endangered Species of Wild Flora and Fauna. Under this export or import of endangered species of flora and fauna are subject to strict control and commercial exploitation of such species is prohibited.

There are at present 45 national parks, 211 wild life sanctuaries and 35 zoological gardens in the country. State governments are given financial aid for improvement and development of national parks and sanctuaries.

DEMOGRAPHIC BACKGROUND

CENSUS

The first all-India census, though not synchronously taken, was completed in 1872. Since 1881, the census in India has been taken regularly every ten years. The latest in 1981 marked the completion of 110 years of decennial census taking in the country. The enumeration was conducted between 9 February 1981 and 5 March 1981 (with reference point as the sunrise of 1 March 1981) throughout the country except Jammu and Kashmir and Assam. Due to unfavourable weather conditions in February-March 1981, the census in Jammu and Kashmir was conducted from 20 April to 10 May 1981 (with reference point being the sunrise of 6 May 1981). The census could not be taken in Assam due to disturbed conditions prevailing there at the time of census.

Total Population

According to the 1981 census, the total population of India (including the projected population of Assam) was 68,51,84,692. As compared to the 1971 census, it showed an increase of 25 per cent. The main cause of this increase in population is the fall in the death rate brought about by better health conditions, effective control of epidemics,

TABLE 1·1

Growth of Population (1911-1981)

State/Union Territory	1911	1921	1931	1941	1951	1961	1971	1981
India . . .	25,20,93,390	25,13,21,213	27,89,77,238	31,86,60,580	36,10,88,090	43,92,34,771	54,81,59,652	68,51,84,692
States								
1. Andhra Pradesh .	2,14,47,412	2,14,20,448	2,42,03,573	2,72,89,340	3,11,15,259	3,59,83,447	4,35,02,708	5,35,49,673
2. Assam . .	38,48,617	46,36,980	55,60,371	66,94,790	80,28,856	1,08,37,329	1,46,25,152	1,98,96,843
3. Bihar . .	2,83,14,281	2,81,26,675	3,13,47,108	3,51,70,840	3,87,82,271	4,64,47,457	5,63,53,369	6,99,14,734
4. Gujarat . .	98,03,587	1,01,74,989	1,14,89,828	1,37,01,551	1,62,62,657	2,06,33,350	2,66,97,475	3,40,85,799
5. Haryana . .	41,74,690	42,55,905	45,59,931	52,72,845	56,73,614	75,90,543	1,00,36,808	1,29,22,618
6. Himachal Pradesh	18,96,944	19,28,206	20,29,113	22,63,245	23,85,981	28,12,463	34,60,434	42,80,818
7. Jammu and Kashmir[2] . . .	22,92,535	24,24,359	26,70,208	29,46,728	32,53,852	35,60,976	46,16, 632	59,87,389
8. Karnataka . .	1,35,25,251	133,77,599	1,46,32,992	1,62,55,368	1,94,01,956	2,35,86,772	2,92,99,014	3,71,35,714
9. Kerala . .	71,47,673	78,02,127	95,07,050	1,10,31,541	1,35,49,118	1,69,03,715	2,13,47,375	2,54,53,680
10. Madhya Pradesh .	1,94,40,965	1,91,71,750	2,13,55,657	2,39,90,608	2,60,71,637	3,23,72,408	4,16,54,119	5,21,78,844
11. Maharashtra .	2,14,74,523	2,08,49,666	2,39,59,300	2,68,32,758	3,20,02,564	3,95,53,718	5,04,12,235	6,27,84,171
12. Manipur . .	3,46,222	3,84,016	4,45,606	5,12,069	5,77,635	7,80,037	10,72,753	14,20,953
13. Meghalaya . .	3,94,005	4,22,403	4,80,837	5,55,820	6,05,674	7,69,380	10,11,699	13,35,819
14. Nagaland . .	1,49,038	1,58,801	1,78,844	1,89,641	2,12,975	3,69,200	5,16,449	7,74,930
15. Orissa. . .	1,13,78,875	1,11,58,586	1,24,91,056	1,37,67,988	1,46,45,946	1,75,48,846	2,19,44,615	2,63,70,271
16. Punjab . .	67,31,510	71,52,811	80,12,325	96,00,236	91,60,500	1,11,35,069	1,35,51,060	1,67,88,915
17. Rajasthan . .	1,09,83,509	1,02,92,648	1,17,47,974	1,38,63,859	1,59,70,774	2,01,55,602	2,57,65,806	3,42,61,862
18. Sikkim . .	87,920	81,721	1,09,808	1,21,520	1,37,725	1,62,189	2,09,843	3,16,385
19. Tamil Nadu .	2,09,02,616	2,16,28,518	2,34,72,099	2,62,67,507	3,01,19,047	3,36,86,953	4,11,99,168	4,84,08,077
20. Tripura . .	2,29,613	3,04,437	3,82,450	5,13,010	6,39,029	11,42,005	15,56,342	20,53,058
21. Uttar Pradesh .	4,81,54,908	4,66,72,398	4,97,79,538	5,65,35,154	6,32,19,655	7,37,54,554	8,83,41,144	11,08,62,013
22. West Bengal .	1,79,98,769	1,74,74,348	1,88,97,036	2,32,29,552	2,62,99,980	3,49,26,279	4,43,12,011	5,45,80,647
Union Territories[3]								
1. Andaman and Nicobar Islands .	26,459	27,086	29,463	33,768	30,971	63,548	1,15,133	1,88,741
2. Arunachal Pradesh	—	—	—	—	—	3,36,558	4,67,511	6,31,839

TABLE 1.1—(*Contd.*)

State/Union Territory	1911	1921	1931	1941	1951	1961	1971	1981
3. Chandigarh .	18,437	18,133	19,783	22,574	24,261	1,19,881	2,57,251	4,51,610
4. Dadra and Nagar Haveli . .	29,020	31,048	38,260	40,441	41,532	57,963	74,170	1,03,676
5. Delhi .	4,13,851	4,88,452	6,36,246	9,17,939	17,44,072	26,58,612	40,65,698	62,20,406
6. Goa, Daman and Diu . .	5,19,222	5,00,904	5,41,710	5,83,736	5,96,059	6,26,667	8,57,771	10,86,730
7. Lakshadweep .	14,555	13,637	16,040	18,355	21,035	24,108	31,810	40,249
8. Mizoram . .	91,204	98,406	1,24,404	1,52,786	1,96,202	2,66,063	3,32,390	4,93,757
9. Pondicherry . .	2,57,179	2,44,156	2,58,628	2,85,011	3,17,253	3,69,079	4,71,707	6,04,471

1. The 1981 population of Assam is based on projections.

2. The population of Jammu and Kashmir for 1951 has been taken to be arithmetic mean of 1941 and 1961 population. The population of the state for 1941 and earlier censuses has been adjusted to exclude that of areas currently under the illegal occupation of Pakistan and China. Later figures exclude the population of such areas.

3. Population figures for Goa, Daman and Diu, and Dadra and Nagar Haveli for 1911, 1941 and 1951 have been assumed to be the same as in 1900, 1901, 1940 and 1950 respectively. Similarly, figures for Pondicherry for 1951 have been assumed to be the same as in 1948. The 1961 figures for Goa, Daman and Diu relate to the census taken by the Portuguese authorities with reference date as 15 December 1960; figures for Dadra and Nagar Haveli relate to 1962 census with reference date as 1 March 1962.

efficient handling of famine conditions and general improvement and economic development. The population has gone up despite a smal fall in the birth rate. The proportion of rural population to tota population was 76.69 per cent and of urban population to tota population was 23.31 per cent. The proportion of main workers who had worked for the major part of the year, to total population was 33.45 per cent. Female work participation rate was 13.99 pe cent. Table 1.1 shows population growth since 1911.

Density

The average density of population per sq km in 1981 was 216. I varied considerably from state to state, being as high as 655 in Kerala and as low as 45 in Sikkim and 8 in Arunachal Pradesh. The area and density of population in states and union territories are shown in table 1.2.

TABLE 1.2
AREA AND DENSITY OF POPULATION

India/State/Union Territory	Area in sq km (000)	Population	Density of population per sq km
INDIA[1]	3,287·3[2]	68,51,84,692	216[3]
1. Andhra Pradesh	275·1[6]	5,35,49,673	195
2. Assam[4]	78·4	1,98,96,843	254
3. Bihar	173.9[6]	6,99,14,734	402
4. Gujarat	196.0[6]	3,40,85,799	174
5. Haryana	44.2[6]	1,29,22,618	292
6. Himachal Pradesh	55.7	42,80,818	77
7. Jammu and Kashmir[5]	222.2[6]	59,87,389	59
8. Karnataka	191·8	3,71,35,714	194
9. Kerala	38·9[6]	2,54,53,680	655
10. Madhya Pradesh	443·5[6]	5,21,78,844	118
11. Maharashtra	307·7[6]	6,27,84,171	204
12. Manipur	22·3	14,20,953	64
13. Meghalaya	22·4[6]	13,35,819	60
14. Nagaland	16.6	7,74,930	47
15. Orissa	155·7	2,63,70,271	169
16. Punjab	50·4	1,67,88,915	333
17. Rajasthan	342·2	3,42,61,862	100
18. Sikkim	7·1	3,16,385	45
19. Tamil Nadu	130·1[6]	4,84,08,077	372
20. Tripura	10·5	20,53,058	196
21. Uttar Pradesh	294·4[6]	11,08,62,013	377
22. West Bengal	88·8[6]	5,45,80,647	615
1. Andaman and Nicobar Islands	8·2	1,88,741	23
2. Arunachal Pradesh	83·7[6]	6,31,839	8
3. Chandigarh	0·1	4,51,610	3,961
4. Dadra and Nagar Haveli	0·5	1,03,676	211
5. Delhi	1·5	62,20,406	4,194
6. Goa, Daman and Diu	3·8	10,86,730	285
7. Lakshadweep	·03	40,249	1,258
8. Mizoram	21·1	4,93,757	23
9. Pondicherry	0·5	6,04,471	1,229

1. The population figures exclude population of area under unlawful occupation of Pakistan and China where census could not be taken.
2. The total area of the country represents provisional "Geographical Areas" as on 31 March 1982, supplied by the Survey of India. The area includes 78,114 sq km under illegal occupation of Pakistan, 5,180 sq km illegally handed over by Pakistan to China and 37,555 sq km under illegal occupation of China.
3. The density has been worked out on a comparable data.
4. Projected figures for 1981.
5. The population figures exclude population of area under unlawful occupation of Pakistan and China where census could not be taken.
6. The area figures are provisional.

The density of population and percentage increase in population between 1921 and 1981 are shown in table 1.3.

TABLE 1.3 DENSITY AND INCREASE IN POPULATION

Year	Density per sq km	Decade	Percentage increase in population
1921	81	—	—
1931	90	1921—31	11·0
1941	103	1931—41	14·2
1951	117	1941—51	13·3
1961	142	1951—61	21·5
1971	173[1]	1961—71	24·8
1981[2]	216[1]	1971—81	25·0

1. Density has been worked out on a comparable data.
2. 1981 figures have been worked out after including projected figures of Assam.

Sex Ratio

In 1981, there were 35.4 crore males and 33.1 crore females. Thus for every 1,000 males, India has 934 females, the number declining from 972 in 1901 to 950 in 1931. Only Kerala has more women than men, that is, 1,032 per thousand men. The lowest female ratio among the states is in Sikkim, that is 835 per thousand men and lowest female ratio among the union territories is in Andaman and Nicobar Islands, where it is 760 per thousand men.

Literacy

For the purpose of the census, a person is deemed as literate if he or she can read and write with understanding in any language. A person who can merely read but cannot write is not defined as literate. Children below five years were treated as illiterate.

Literacy rates would be more meaningful if one were to exclude the population in the age group 0-4 from total population. However, at this stage, this information is not available since it would only be generated through further tabulations. Therefore, the entire population is being taken into account including the population in the age group 0-4. According to 1981 census, the literacy percentage is 36.23. Out of this 46.89 per cent of males and 24.82 per cent of females were literate. The table 1.4 presents the literacy rates in the country. In working out these rates for 1981, the population of Assam has been excluded. The rates up to 1941 are for undivided India.

TABLE 1.4 LITERACY RATE PER 1,000 BY SEX

Year	Males	Females	Persons
1901	98	6	53
1911	106	11	59
1921	122	18	72
1931	156	29	95
1941	249	73	161
1951	249	79	167
1961	344	130	240
1971	395	187	294
1981	469	248	362

The steady improvement in the proportion of literates among bot males and females is apparent from the table 1.4. In particular the improvement in the case of females is noteworthy. Howeve nearly half the males and three-fourth of the females in the countr are still illiterate. Of the total population, nearly 64 per cent of th people are still illiterate.

Languages

A number of languages and dialects are spoken in India. Of these 15 languages have been specified in the Eighth Schedule of the Constitution. These are : Assamese, Bengali, Gujarati, Hindi, Kannada Kashmiri, Malayalam, Marathi, Oriya, Punjabi, Sanskrit, Sindhi, Tamil, Telugu and Urdu.

Birth and Death Rates

According to a Sample Registration System, the birth rate and deat rate for India for 1981 was as follows :

(1) Birth rate—33.3 per 1,000 population, and

(2) Death rate—12.5 per 1,000 population.

The expectation of life at birth was 50.8 years for males and 50. years for females during 1976-77.

The Registration of Births and Deaths Act, 1969 regulates and unifies registration of births and deaths. The state rules, approved by Government, have been notified by states and union territories under section 30 of the Act.

Towns and Villages

In 1981 there were 3,949 towns and 5,57,139 inhabited and 48,085 uninhabited villages in the country. Among the states, Uttar Pradesh had the largest number of towns (704), followed by Tamil Nadu (434), Madhya Pradesh (327) and Maharashtra (307). Nagaland has 7, Sikkim 8, Tripura 10, Himachal Pradesh 47, Jammu and Kashmir 58 and Haryana 81 towns.

Andaman and Nicobar Islands and Dadra and Nagar Haveli had one town each, while Delhi had 30 towns. Uttar Pradesh had 1,12,568 inhabited and 11,678 uninhabited villages. Madhya Pradesh had 71,352 and Sikkim 440 inhabited villages. Kerala did not have any uninhabited village. Arunachal Pradesh had the largest number o inhabited villages (3,257) but no uninhabited village.

There were 12 cities with a population of 10 lakh and above recorded in 1981. These are Calcutta, Greater Bombay, Delhi, Madras, Hyderabad, Ahmadabad, Bangalore, Kanpur, Pune, Nagpur, Luckno and Jaipur.

The country had 412 districts in 1981.

Scheduled Castes and Tribes

According to 1981 census, the population of the scheduled castes an scheduled tribes was 10,47,54,623 and 5,16,28,638 respectively. Tabl 1.6 shows the figures of scheduled castes|scheduled tribes for all the

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Note : An urban area is : (a) All places with a municipal corporation, cantonment board or notified town area committee, etc. (b) All other places which have : (i) a minimum population of 5,000; (ii) at least 75 per cent of male working population engaged in non-agricultural pursuits; and (iii) a density of population of at least 400 persons pe sq km.

The inhabited and uninhabited villages stand for their literal meaning.

TABLE 1·5

Population, Number of Literates and Literacy Rates for 1981 by Sex

India/State/Union Territory	1981								
	POPULATION			LITERATES			PERCENTAGE OF LITERATES TO TOTAL POPULATION		
	Persons	Male	Female	Persons	Male	Female	Persons	Male	Female
INDIA . . .	66,52,87,849	34,39,30,423	32,13,57,426	24,10,31,849	16,12,85,568	7,97,46,281	36·23	46·89	24·82
States									
1. Andhra Pradesh	5,35,49,673	2,71,08,922	2,64,40,751	1,60,34,818	1,06,42,377	53,92,441	29·94	39·26	20·39
2. Assam . . .	—	—	—	—	—	—	—	—	—
3. Bihar . . .	6,99,14,734	3,59,30,560	3,39,84,174	1,83,21,004	1,36,91,472	46,29,532	26·20	38·11	13·62
4. Gujarat . . .	3,40,85,799	1,75,52,640	1,65,33,159	1,48,95,844	95,55,269	53,40,575	43·70	54·44	32·30
5. Haryana . . .	1,29,22,618	69,09,938	60,12,680	46,69,898	33,30,658	13,39,240	36·14	48·20	22·27
6. Himachal Pradesh .	42,80,818	21,69,931	21,10,887	18,18,287	11,54,281	6,64,006	42·48	53·19	31·46
7. Jammu and Kashmir	59,87,389	31,64,660	28,22,729	15,96,776	11,48,569	4,48,207	26·67	36·29	15·88
8. Karnataka . .	3,71,35,714	1,89,22,627	1,82,13,087	1,42,82,717	92,36,276	50,46,441	38·46	48·81	27·71
9. Kerala . .	2,54,53,680	1,25,27,767	1,29,25,913	1,79,24,732	94,28,092	84,96,640	70·42	75·26	65·73
10. Madhya Pradesh .	5,21,78,844	2,68,86,305	2,52,92,539	1,45,44,568	1,06,17,302	39,27,266	27·87	39·49	15·53
11. Maharashtra .	6,27,84,171	3,24,15,126	3,03,69,045	2,96,20,806	1,90,56,503	1,05,64,303	47·18	58·79	34·79
12. Manipur . .	14,20,953	7,21,006	6,99,947	5,87,618	3,84,231	2,03,387	41·35	53·29	29·06
13. Meghalaya .	13,35,819	6,83,710	6,52,109	4,55,191	2,59,024	1,96,167	34·08	37·89	30·08
14. Nagaland . .	7,74,930	4,15,910	3,59,020	3,29,878	2,08,195	1,21,683	42·57	50·06	33·89
15. Orissa . . .	2,63,70,271	1,33,09,786	1,30,60,485	90,27,205	62,68,643	27,58,562	34·23	47·10	21·12
16. Punjab . .	1,67,88,915	89,37,210	78,51,705	68,60,349	42,14,878	26,45,471	40·86	47·16	33·69
17. Rajasthan . .	3,42,61,862	1,78,54,154	1,64,07,708	83,54,117	64,81,156	18,72,961	24·38	36·30	11·42
18. Sikkim . . .	3,16,385	1,72,440	1,43,945	1,07,738	75,779	31,959	34·05	43·95	22·20
19. Tamil Nadu . .	4,84,08,077	2,44,87,624	2,39,20,453	2,26,37,659	1,42,67,331	83,70,328	46·76	58·26	34·99
20. Tripura . . .	20;53,058	10,54,846	9,98,212	8,64,799	5,45,401	3,19,398	42·12	51·70	32·00
21. Uttar Pradesh .	11,08,62,013	5,88,19,276	5,20,42,737	3,01,05,260	2,27,98,451	73,06,809	27·16	38·76	14·04
22. West Bengal . .	5,45,80,647	2,85,60,901	2,60,19,746	2,23,44,153	1,44,73,045	78,71,108	40·94	50·67	30·25

TABLE 1.5—(*Contd.*)

India/State/Union Territory	1981								
	POPULATION			LITERATES			PERCENTAGE OF LITERATES TO TOTAL POPULATION		
	Persons	Male	Female	Persons	Male	Female	Persons	Male	Female
Union Territories									
1. Andaman and Nicobar Islands . .	1,88,741	1,07,261	81,480	97,321	62,983	34,338	51.56	58·72	42·14
2. Arunachal Pradesh .	6,31,839	3,39,322	2,92,517	1,31,333	98, 211	33,122	20·79	28·94	11·32
3. Chandigarh . .	4,51,610	2,55,278	1,96,332	2,92,580	1,76,130	1,16,450	64·79	69·00	59·31
4. Dadra and Nagar Haveli . .	1,03,676	52,515	51,161	27,655	19,072	8,583	26·67	36·32	16·78
5. Delhi . . .	62,20,406	34,40,081	27,80,325	38,28,326	23,52,883	14,75,443	61·54	68·40	53·07
6. Goa, Daman and Diu	10,86,730	5,48,450	5,38,280	6,15,752	3,59,731	2,56,021	56·66	65·59	47·56
7. Lakshadweep . .	40,249	20,377	19,872	22,165	13,293	8,872	55·07	65·24	44·65
8. Mizoram . . .	4,93,757	2,57,239	2,36,518	2,95,685	1,65,812	1,29,873	59·88	64·46	54.91
9. Pondicherry . .	6,04,471	3,04,561	2,99,910	3,37,615	2,00,520	1,37,095	55·85	65·84	45·71

1. Figures of India for 1981 exclude Assam.
2. The figures of 1981 Include the population of age group 0—4.
3. The figures of 1981 for India and Jammu and Kashmir exclude the population of areas under unlawful occupation of Pakistan and China.

states and union territories as per 1981 census. About 23.51 per cent of the country's population comprised the scheduled castes and the scheduled tribes.

TABLE 1.6
POPULATION OF SCHEDULED CASTES AND TRIBES (1981 CENSUS)

	Scheduled Castes	Scheduled Tribes
INDIA[1]	10,47,54,623	5,16,28,638
States		
1. Andhra Pradesh	79,61,730	31,76,001
2. Assam[1]	—	—
3. Bihar	1,01,42,368	58,10,867
4. Gujarat	24,38,297	48,48,586
5. Haryana[5]	24,64,012	—
6. Himachal Pradesh	10,53,958	1,97,263
7. Jammu and Kashmir[2,5]	4,97,363	—
8. Karnataka[4]	55,95,353	18,25,203
9. Kerala	25,49,382	2,61,475
10. Madhya Pradesh	73,58,533	1,19,87,031
11. Maharashtra	44,79,763	57,72,038
12. Manipur	17,753	3,87,977
13. Meghalaya	5,492	10,76,345
14. Nagaland[3]	—	6,50,885
15. Orissa	38,65,543	59,15,067
16. Punjab[5]	45,11,703	—
17. Rajasthan	58,38,879	41,83,124
18. Sikkim	18,281	73,623
19. Tamil Nadu	88,81,295	5,20,226
20. Tripura	3,10,384	5,83,920
21. Uttar Pradesh	2,34,53,339	2,32,705
22. West Bengal	1,20,00,768	30,70,672
Union Territories		
1. Andaman and Nicobar Islands[3]	—	22,361
2. Arunachal Pradesh	2,919	4,41,167
3. Chandigarh[5]	63,621	—
4. Dadra and Nagar Haveli	2,041	81,714
5. Delhi[5]	11,21,643	—
6. Goa, Daman and Diu	23,432	10,721
7. Lakshadweep[3]	—	37,760
8. Mizoram	135	4,61,907
9. Pondicherry[5]	96,636	—

Note

1. Excludes Assam where Census could not be held owing to disturbed conditions.
2. The population figures exclude population of areas under unlawful occupation of Pakistan and China where census could not be taken.
3. No castes were scheduled by the President of India for Nagaland, Andaman and Nicobar Islands and Lakshadweep.
4. Scheduled caste population figure of Karnataka would appear to include high returns relating to certain communities with nomenclatures similar to those included in the list of scheduled tribes consequent on the removal of area restrictions.
5. No scheduled tribe has been scheduled by the President of India for Haryana, Jammu and Kashmir, Punjab and the union territories of Chandigarh, Delhi and Pondicherry.

2 NATIONAL SYMBOLS

NATIONAL FLAG

The National Flag is a horizontal tricolour of deep saffron (*kesari*) a the top, white in the middle and dark green at the bottom in equa proportion. The ratio of the width of the Flag to its length is two to three. In the centre of the white band is a wheel, in navy blue which represents the *Charkha*. Its design is that of the wheel (*Chakra*) which appears on the abacus of the Sarnath Lion Capital of Asoka. Its diameter approximates to the width of the white band and it has 24 spokes.

The design of the National Flag was adopted by the Constituen Assembly of India on 22 July 1947. Its use and display are regulated by a code.

STATE EMBLEM

The State Emblem of India is an adaptation from the Sarnath Lion Capital of Asoka as preserved in the Sarnath Museum. In the original there are four lions, standing back to back, mounted on an abacu with a frieze carrying sculptures in high relief of an elephant, a galloping horse, a bull and a lion separated by intervening wheels (*Chakras*) over a bell-shaped lotus. Carved out of a single block of polishe sandstone, the Capital is crowned by the Wheel of the Law (*Dharma Chakra*).

In the State Emblem adopted by the Government of India on 26 Janaury 1950, only three lions are visible, the fourth being hidde from view. The wheel appears in relief in the centre of the abacu with a bull on the right and a horse on the left and the outlines of th other wheels on the extreme right and left. The bell-shaped lotu has been omitted. The words *Satya Meva Jayate,* from the *Mundak Upanishad,* meaning 'Truth alone Triumphs', are inscribed below th abacus in Devanagari script.

NATIONAL ANTHEM

The song *Jana-gana-mana,* composed by Rabindranath Tagor (1861-1941) was adopted by the Constituent Assembly as the Nationa Anthem of India on 24 January 1950. It was first sung on 27 Decembe 1911 at the Calcutta session of the Indian National Congress

The complete song consists of five stanzas. The first stanza constitutes the full version of the National Anthem. It reads :

Jana-gana-mana-adhinayaka, jaya he
Bharata-bhagya-vidhata.

Punjaba-Sindhu-Gujarata-Maratha-
Dravida-Utkala-Banga

Vindhya-Himachala-Yamuna-Ganga
Uchhala-jaladhi-taranga.

Tava subha name jage,
tava subha asisa mage,
gahe tava jaya-gatha,

Jana-gana-mangla-dayaka, jaya he
Bharata-bhagya-vidhata.
Jaya he, jaya he, jaya he,
jaya jaya jaya, jaya he.

Playing time of the full version of the National Anthem is approximately 52 seconds. A short version consisting of the first and last lines of the stanza (playing time approximately 20 seconds) is also played on certain occasions. The following is Tagore's English rendering of this stanza :

Thou art the ruler of the minds of all people,
Dispenser of India's destiny.
Thy name rouses the hearts of Punjab, Sind, Gujarat and Maratha,
Of Dravida and Orissa and Bengal;
It echoes in the hills of Vindhyas and Himalayas,
mingles in the music of Jamuna and Ganges
and is chanted by the waves of the Indian Sea.
They pray for thy blessings and sing thy praise.
The saving of all people waits in thy hand,
Thou dispenser of India's destiny.
Victory, victory, victory to thee.

NATIONAL SONG

The song *Vande Mataram,* composed by Bankim Chandra Chatterji (1838-1894) was a source of inspiration to the people in their struggle for freedom. It has an equal status with *Jana-gana-mana.* The first political occasion on which it was sung was the 1896 session of the Indian National Congress. The following is the text of its first stanza:

Vande Mataram!

Sujalam, suphalam, malayaja-shitalam,

Shasyashyamalam, Mataram!

Shubhrajyotsna, pulakitayaminim,

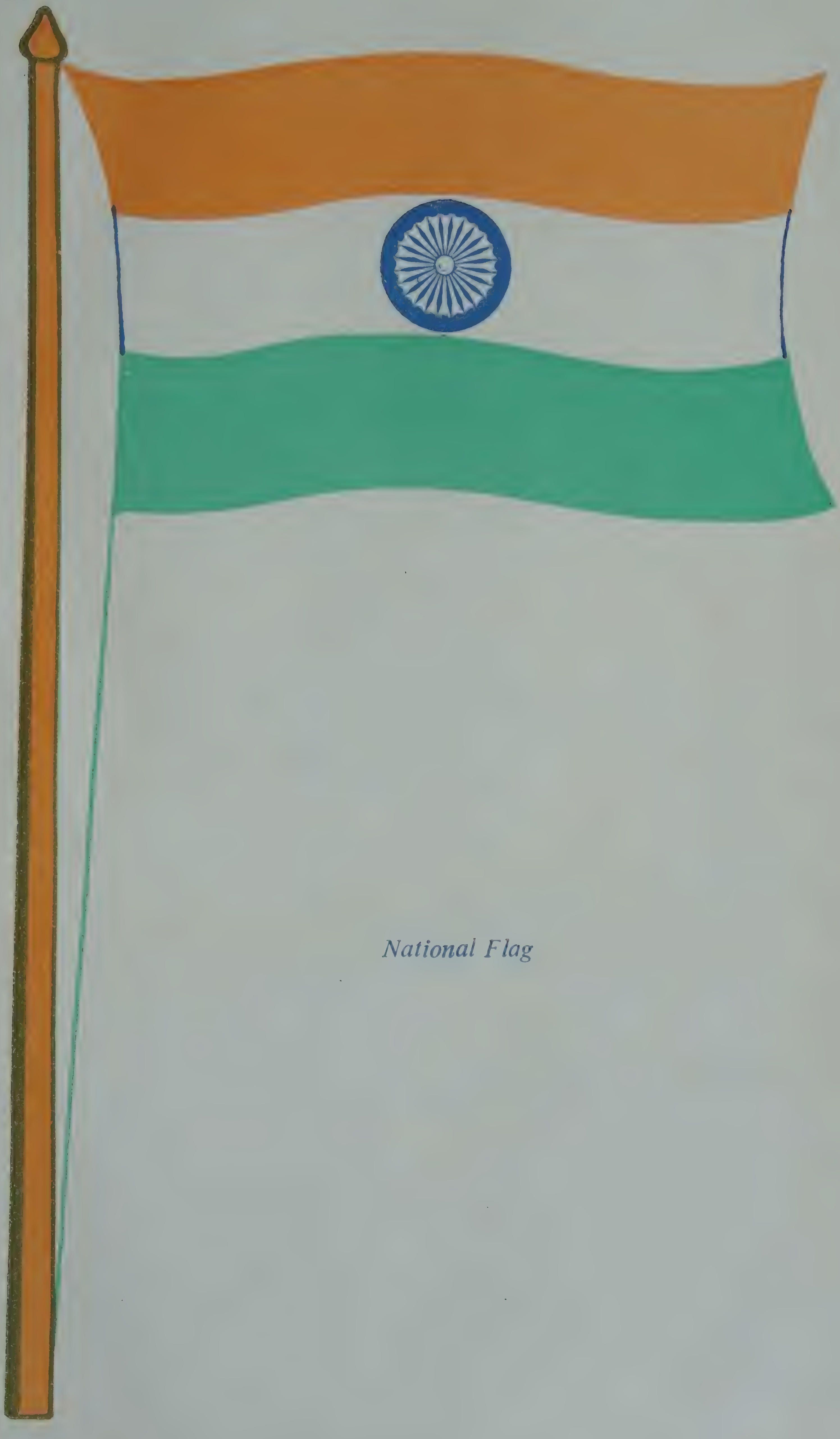
Phullakusumita-drumadala-shobhinim,

Suhasinim sumadhura-bhashinim,

Sukhadam, varadam, Mataram!

The English translation of the stanza rendered by Sri Aurbindo (1872–1950) is :

I bow to thee, Mother,
richly-watered, richly-fruited,
cool with the winds of the south,



National Flag

National Emblem

dark with the crop of the harvests,
the Mother!
Her nights rejoicing in the glory of the moonlight,
her lands clothed beautifully with her trees in flowering bloom,
sweet of laughter, sweet of speech,
the Mother, giver of boons, giver of bliss!

NATIONAL CALENDAR

A uniform National Calendar based on the Saka era with Chaitra as its first month and a normal year of 365 days was adopted from 22 March 1957 along with the Gregorian calendar for the following official purposes : (i) The Gazette of India, (ii) news broadcast by All India Radio, (iii) calendars issued by the Government of India, and (iv) government communications addressed to members of the public.

The dates of the National Calendar have a permanent correspondence with the dates of the Gregorian calendar; 1 Chaitra falling on 22 March normally and on 21 March in a leap year.

NATIONAL NIMAL

The majestic tiger Panthera *tigris tigris* (Linnaeus), the national animal of India, for its rich colour, illusive design and formidable power has always been held in high esteem in India. Among the carnivorous, the tiger is very gorgeous and attractive with roaring voice as symbol of power. Out of eight races of the species known world over the Indian race is the Bengal tiger. The Royal Bengal Tiger occurs throughout the country and also found in Nepal, Bhutan and Bangladesh. As shrinkage of habitat in India dwindled its population to only 1,827 in 1972 the Project Tiger was launched on 1 April 1973. Since then there is a gradual increase in its population estimated to be nearly 3,500 in 1983.

NATIONAL BIRD

The Indian peacock (*Pavo cristatus* Linnaeus), the national bird of India, is one of the most beautiful bird, particularly the males, having the glistering blue neck, breast, fanshape crest and long magnificent tail. The courtship dance of the male by fanning up the tail before the female is most spectacular. From time immemorial, this bird has found a profound place in Indian literature, folklores and legends. The bird is found throughout the plains but is more concentrated in the dry open habitats of northern India.

The Indian peafowl, as peacock is called, is widely distributed in the country from south and east of Indus, Jammu and Kashmir, east Assam, south to Mizoram and the whole of Indian Peninsula. It is fully protected under the Indian Wild Life (Protection) Act.

3 GOVERNMENT

India, a union of states, is a Sovereign Socialist Secular Democratic Republic with a parliamentary system of Government. The Republic is governed in terms of the Constitution, which was adopted by the Constituent Assembly on 26 November 1949 and came into force on 26 January 1950.

The Constitution which envisages a parliamentary form of government is federal in structure with unitary features. The President of India is the constitutional head of the executive of the Union. Though the Constitution vests the executive power in the President, it also specifies that the said power is to be exercised in accordance with the Constitution. By virtue of Article 74 (1), there shall be a Council of Ministers with the Prime Minister as the head to aid and advise the President who shall, in the exercise of his functions, act in accordance with such advice. The real executive power thus vests in the Council of Ministers with the Prime Minister as the head. The Council of Ministers is collectively responsible to the House of the People (Lok Sabha). Similarly, in the states, the Governor occupies the position of the head of the executive of the state, but it is really the Council of Ministers with the Chief Minister as the head in whom the real executive power vests. The Council of Ministers of the state is collectively responsible to the legislative assembly of the state.

The Constitution distributes the legislative power between the Union Legislature and the state legislatures and provides for vesting of residual powers in Parliament. The power to amend the Constitution also vests in Parliament.

The Constitution has provisions for the independence of the judiciary, the Comptroller and Auditor-General of India, the Public Service Commissions and the Chief Election Commissioner.

The judiciary has now been separated from the executive at all levels throughout the country.

THE UNION AND ITS TERRITORY

India comprises 22 states and nine union territories. The states are : Andhra Pradesh, Assam, Bihar, Gujarat, Haryana, Himachal Pradesh, Jammu and Kashmir, Karnataka, Kerala, Madhya Pradesh, Maharashtra, Manipur, Meghalaya, Nagaland, Orissa, Punjab, Rajasthan, Sikkim, Tamil Nadu, Tripura, Uttar Pradesh and West Bengal. The union territories are : Andaman and Nicobar Islands, Arunachal Pradesh, Chandigarh, Dadra and Nagar Haveli, Delhi, Goa, Daman and Diu, Lakshadweep, Mizoram and Pondicherry.

TIZENSHIP

The Constitution provides for a single and uniform citizenship for the whole of India. Every person who was at the commencement of the Constitution (26 January 1950) domiciled in the territory of India and (a) was born in the territory of India, or (b) either of whose parents was born in the territory of India, or (c) who had been ordinarily resident in the territory of India for not less than five years immediately preceding that date, became a citizen of India. Special provision was made for migrants from Pakistan and for persons of Indian origin resident abroad. The Citizenship Act, 1955, which supplements the provisions of the Constitution, provides for the acquisition of citizenship by birth, descent, registration, naturalisation and incorporation of territory. The Act also provides for loss of citizenship by renunciation, termination and deprivation.

JNDAMENTAL GHTS

The Constitution offers all citizens, individually and collectively, some basic freedoms. These are guaranteed in the Constitution in the form of six broad categories of Fundamental Rights which are justiciable. These are : (i) the right to equality including equality before law, prohibition of discrimination on grounds of religion, race, caste, sex, or place of birth and equality of opportunity in matters of employment; (ii) the rights to freedom of speech and expression; assembly; association or union; movement; residence; and the right to practise any profession or occupation (some of these rights are subject to the security of the State, friendly relations with foreign countries, public order, decency or morality); (iii) the right against exploitation, prohibiting all forms of forced labour, child labour and traffic in human beings; (iv) the right to freedom of conscience and free profession, practice and propagation of religion; (v) the right of any section of the citizens to conserve their culture, language or script and right of minorities to establish and administer educational institutions of their choice; and (vi) the right to constitutional remedies for the enforcement of Fundamental Rights.

UNDAMENTAL UTIES

By the 42nd Amendment of the Constitution, adopted in 1976, fundamental duties of the citizens have also been enumerated. These enjoin upon a citizen, among other things, to abide by the Constitution, to cherish and follow the noble ideals which inspired our national struggle for freedom, to defend the country and render national service when called upon to do so and to promote harmony and the spirit of common brotherhood amongst all the people of India transcending religious, linguistic and regional or sectional diversities.

DIRECTIVE RINCIPLES F STATE OLICY

The Constitution lays down certain Directive Principles of State Policy which, though not justiciable, are 'fundamental in the governance of the country' and it is 'the duty of the State to apply these principles in making laws'. These lay down that the State shall strive to promote the welfare of the people by securing and protecting as effectively as it may a social order in which justice, social, economic and political, shall inform all the institutions of the national life. The State shall direct its policy in such a manner as to secure the right of all men and women to an adequate means of livelihood, equal pay for equal work, and, within the limits of its economic capacity and development, to make effective provision for securing the right to work, education and to public assistance in the event of unemployment, old age, sickness and disablement or other cases of undeserved want. The State shall also endeavour to secure to workers a living wage, humane conditions of work, a decent standard of life and full involvement of workers in the management of industries.

In the economic sphere, the State is to direct its policy in such a manner as to secure the distribution of ownership and control of the material resources of the community to subserve the common good and to ensure that the operation of the economic system does not result in the concentration of wealth and means of production to common detriment.

Some of the other important Directives relate to the provision of opportunities and facilities for children to develop in a healthy manner, free and compulsory education for all children up to the age of 14; promotion of educational and economic interests of scheduled castes, scheduled tribes and other weaker sections; organisation of village *panchayats;* separation of judiciary from the executive; promulgation of a uniform civil code for the whole country; protection of national monuments; promotion of justice on a basis of equal opportunity; provision of free legal aid; protection and improvement of the environment and safeguarding of forests and wild life of the country; and the promotion of international peace and security, just and honourable relations between nations, respect for international law and treaty obligations and settlement of international disputes by arbitration.

THE UNION

EXECUTIVE

The Union executive shall consist of the President, the Vice-President and the Council of Ministers with the Prime Minister at the head to aid and advise the President.

President

The President is elected by the members of an electoral college consisting of the elected members of both Houses of Parliament and of the legislative assemblies of states in accordance with the system of proportional representation by means of the single transferable vote. To secure uniformity among the states *inter se* as well as parity between the states as a whole and the Union, suitable weightage is given to each vote. The President must be a citizen of India, not less than 35 years of age, and qualified for election as a member of the Lok Sabha (House of the People). His term of office is five years and he is eligible for re-election. His removal from office is to be in accordance with the procedure prescribed in article 61 of the Constitution. He may, by writing under his hand addressed to the Vice-President, resign his office.

The executive power of the Union is vested in the President and is exercised by him either directly or through officers subordinate to him in accordance with the Constitution. The supreme command of the defence forces of the Union also vests in him. The President summons, prorogues, addresses, sends messages to Parliament and dissolves the Lok Sabha; promulgates ordinances at any time, except when both Houses of Parliament are in session; makes recommendations for introducing financial and money bills and gives assent to bills; grants pardons, reprieves, respites or remissions of punishment or suspends, remits or commutes sentences in certain cases. When there is a failure of constitutional machinery in a state, he can assume to himself all or any of the functions of the government of the state. The President can proclaim emergency in the country if he is satisfied that a grave emergency exists whereby the security of India or of any part of its territory is threatened whether by war or external aggression or armed rebellion.

Vice-President

The Vice-President is elected by the members of an electoral college consisting of the members of both Houses of Parliament in accordance with the system of proportional representation by means of the single transferable vote. He must be a citizen of India, not less than 35 years of age, and eligible for election as a member of the Rajya Sabha (Council of States). His term of office is five years and he is eligible for re-election. His removal from office is to be in accordance with the procedure prescribed in article 67(b).

The Vice-President is the ex-officio Chairman of the Rajya Sabha and acts as the President when the latter is unable to discharge his functions due to absence, illness or any other cause, or till the election of a new President (to be held within six months) when a vacancy is caused by death, resignation or removal, or otherwise of the President. While so acting, he ceases to perform the function of the Chairman of the Rajya Sabha.

Council of Ministers

There is a Council of Ministers headed by the Prime Minister to aid and advise the President in the exercise of his functions. The Prime Minister is appointed by the President who also appoints other ministers on the advice of the Prime Minister. The Council is collectively responsible to the Lok Sabha. It is the duty of the Prime Minister to communicate to the President all decisions of the Council of Ministers relating to the administration of the affairs of the Union and proposals for legislation and information relating to them.

The Council of Ministers comprises ministers, who are members of the Cabinet, ministers of state and deputy ministers. For the list, see Appendices.

Administrative Set-up

Rules of Business have been framed under the Constitution for the allocation of the business of government among ministers for convenient transaction.

The allocation is made by the President on the advice of the Prime Minister specifying the items of business allotted to each ministry and by assigning a ministry or a part of a ministry or more than one ministry to the charge of a minister. A cabinet minister is often assisted by a minister of state or a deputy minister or both.

Generally, each ministry has an officer designated as Secretary to the Government of India to advise the minister on policy matters and general administration.

Planning of Government Business

The Department of Parliamentary Affairs has been entrusted with the responsibility of co-ordinating, planning and arrangement of government business—both legislative and non-legislative in Lok Sabha and Rajya Sabha. The Department maintains contacts with leaders of opposition parties and groups for their views on the allocation of time in the two Houses on important issues coming up before Parliament. In order to ascertain their views on national problems, it also arranges meetings of the opposition leaders with the Prime Minister and/or ministers concerned.

Cabinet Secretariat

The Cabinet Secretariat has an important co-ordinating role in the process of decision-making at the highest level and operates under the direction of the Prime Minister. Its functions include submission of cases to the Cabinet and its committees, preparation of the records of decision taken and follow-up action on their implementation. It also serves the committees of Secretaries which meet periodically under the chairmanship of the Cabinet Secretary to consider and advise on problems requiring inter-ministerial consultation and co-ordination. It formulates the Rules of Business and allocates the business of the Government of India to the ministries and departments under the direction of the Prime Minister and with the approval of the President. The Department obtains and circulates to the President, the Vice-President, the Council of Ministers and other important functionaries, periodical summaries and notes on important developments in each ministry.

An Economic Administration Reforms Commission under the chairmanship of L. K. Jha was constituted on 5 March 1981, for advising the Government on certain important areas of economic administration and on matters involving interaction between different sectors of government actively in this field. The Commission worked as a Three-man Commission upto 30 June 1983 and thereafter it was restructured as One-man Commission with L. K. Jha as Chairman. The Commission finally wound up on 31 July 1984 after completing its work.

On 21 March 1983, Government constituted an Advisory Board on Energy under the chairmanship of K. C. Pant, Member of Parliament. It includes representatives from different energy sectors and also specialists and experts. The Board will be responsible for continuously reviewing the energy situation and propose future energy options on an integrated and co-ordinated basis. The Board will assess the likely demand and availability of different forms of energy and suggest appropriate arrangements to meet the country's energy needs on an optimal basis. An important function of the Board will be to propose measures for energy conservation, energy substitution and more efficient use of different forms of energy. The term of the Board will be initially for two years.

The Government on 18 February 1983 set up an Economic Advisory Council under the Chairmanship of Prof. Sukhmoy Chakravarty to advise on such specific issues relating to economic policy and development as are referred to it by the Prime Minister and also on such issues as the members themselves may bring up for Government's consideration.

A Committee in the Cabinet Secretariat under the Chairmanship of Prof. M.G.K. Menon, member, Planning Commission is working since 6 September 1983 to work out modalities and mechanisms for implementation of technology policy as enunciated in the Technology Policy Statement and to monitor the progress in such implementation.

PUBLIC SERVICES

For recruitment to Civil Services and posts under the Union Government, the Constitution provides for an independent body known as the Union Public Service Commission. The Chairman and members of the Commission are appointed by the President.

To ensure the independence of the Commission, the Constitution debars its chairman from further employment either under the Government of India or the government of a state. A member of the Commission is, however, eligible for appointment as chairman of that Commission or of a state Public Service Commission, but for no other government employment.

The personnel of the Commission as on 1 January 1984 were :

Chairman : Dr. M. L. Shahare
Members : N. S. Saksena, Jaswant Rai Bansal,
A. K. Bakshi, Abdul Hamid, Smt. R. O. Dhan,
K. Venkata Ramaiah and S. Samaddar.

Staff Selection Commission

On the recommendations of the Administrative Reforms Commission a Subordinate Service Commission came into existence on 1 July 1976. It was renamed as the Staff Selection Commission from 26 September 1977. Its primary function is to make recruitment to non-technical class III posts in different departments of the Government of India and in subordinate offices except those posts for which recruitment is made by the Railway Service Commission and industrial establishments. The Commission's headquarters as well as the office of its northern region is located in New Delhi. The offices of the central, western, north eastern, eastern and southern regions are located at Allahabad, Bombay, Guwahati, Calcutta and Madras respectively. It has one sub-regional office at Raipur. The Chairman of the Commission as on 1 January 1984 was Smt. Inderjit Kaur Sandhu.

All India Services

The All India Services Act, 1951 provided for the constitution of two services *viz.*, the Indian Administrative Service and the Indian Police Service. The Act was amended in 1963 to provide for the constitution of three more all India services, *viz.*, the Indian Service of Engineers, the Indian Forest Service and the Indian Medical and Health Service. The Indian Forest Service was constituted on 1 July 1966. The Indian Administrative Service is controlled by the Department of Personnel and Administrative Reforms while the Indian Police Service is controlled by the Ministry of Home Affairs. The Indian Forest Service is controlled by the Ministry of Agriculture. Apart from these, there are 32 Central Civil Services.

The Civil Service in the Central Government is organised into four classes *viz.*, Group A, Group B, Group C and Group D equivalent respectively to Class I, Class II, Class III and Class IV, the four fold vertical classification corresponding in the descending order, to differences in the responsibility of the work performed and the qualifications required. Class I includes All India Services and the Central Civil Services.

COMPTROLLER AND AUDITOR-GENERAL

The Comptroller and Auditor-General of India is appointed by the President. The procedure and the grounds for his removal from office are the same as for a Supreme Court judge. He is not eligible for further office under the Union or a state government after he ceases to hold his office.

The President on the advice of the Comptroller and Auditor-General prescribes the form in which the accounts of the Union and of the states are to be kept. His reports on the accounts of the Union and of the states are submitted to the President and the respective Governors and are placed before Parliament and state legislatures.

The duties, powers and conditions of service of the Comptroller and Auditor-General have been specified by the Comptroller and Auditor-General's (Duties, Powers and Conditions of Service) Act, 1971.

OFFICIAL LANGUAGE

According to the Constitution, Hindi in Devanagari script is the official language of the Union and the international form of Indian numerals is to be used for the official purposes of the Union. The Constitution also authorised the continued use of the English language up to 25 January 1965, after which Parliament could further consider the issue. Drawing authority from the Constitution, the Official Languages Act, 1963 further provided for the continued use of English, in addition to Hindi for the official purposes of the Union and also for the transaction of business in Parliament. It also provides that English shall be used for purposes of communication between the Union and a state which has not adopted Hindi as its official language. It does not, however, prevent a state which has not adopted Hindi as its official language from using Hindi for communication with the Union or with a state which has adopted Hindi as its official language. The Act also lays down that both Hindi and English shall compulsorily be used for certain specified purposes, such as, resolutions, general orders, rules, notifications, press communiques, administrative reports, etc.

Under the provisions of section 8 of the Official Languages Act, 1963, Government have framed the Official Languages (Use for Official Purposes of the Union) Rules, 1976 which are intended to provide practical guidelines for the implementation of the official language policy of the Government. Salient features of these rules are as under : (i) The rules apply to all Central Government offices, including any office of a corporation or company owned or controlled by the Central Government. (ii) Communications from a Central Government office to a state or union territory in Region A (comprising Uttar Pradesh, Himachal Pradesh, Madhya Pradesh, Bihar, Rajasthan, Haryana and Delhi) or to any person in such state or union territory shall be in Hindi. (iii) Communications from a Central Government office to a state or union territory in Region B (comprising Punjab, Gujarat, Maharashtra, Chandigarh and the Andaman and Nicobar Islands) shall ordinarily be in Hindi. However, communications to any person in Region B may be either in Hindi or in English. (iv) Communications from a Central Government office to a state or union territory or to any person in such state or union territory (other than those indicated in (ii) and (iii) above shall be in English. (v) Communications between one ministry or department of the Central Goverment and another may be in Hindi or in English. (vi) Communications between a ministry or department and an attached or subordinate office of the Central Government located in Region A shall be in Hindi on such proportion as the Central Government may determine from time to time (the proportion currently in force is 2 : 3). Communications between other Central Government offices situated in Region A shall be only in Hindi. (vii) All communications received in Hindi shall be replied to in Hindi. Similarly whenever any application, appeal or representation is made or signed in Hindi it shall be replied to in Hindi. (viii) Every Central Government employee has the option to use either Hindi or English for recording notes or minutes on a file, without being required to furnish a translation thereof in the other language. (ix) All manuals, codes and other procedural literature relating to Central Government offices shall be prepared both in Hindi and English in diglot form. All forms, headings of registers, name plates, notice boards and the various items of stationery, etc., shall be in Hindi and English. (x) It shall be the responsibility of the officer signing the documents specified in section 3(3) of the Act to ensure that these are issued both in Hindi and in English. (xi) It shall be the responsibility of the administrative head of each Central Government office to ensure that the provisions of the Act and the Rules are properly complied with and to devise effective check points for this purpose.

The general policy of Government is to encourage the progressive use of Hindi as the official language of the Union and as link language for communications between the Centre and a state and between states themselves.

The Department of Official Language under the Ministry of Home Affairs has been entrusted with the responsibility of implementing the official language policy of the Government and to coordinate the activities of the various ministries/departments in this behalf.

LEGISLATURE

The legislature of the Union, which is called Parliament, consists of the President and two Houses, known as the Council of States (Rajya Sabha) and the House of the People (Lok Sabha). Each House of Parliament has to meet within six months of its previous sitting. A joint sitting of the two Houses can be held in certain cases.

Rajya Sabha

The Constitution provides that the Rajya Sabha shall consist of not more than 250 members, of whom 12 having special knowledge or practical experience in literature, science, art and social service, shall be nominated by the President and the rest shall be representatives of the states and the union territories. The elections to the Rajya Sabha are indirect; those representing the states are elected by the elected members of the legislative assemblies of the states concerned in accordance with the system of proportional representation by means of the single transferable vote and those representing the union territories are chosen in such a manner as Parliament may by law prescribe. The Rajya Sabha is not subject to dissolution, one-third of its members retiring on the expiration of every second year.

The membership of the Rajya Sabha, as constituted at present, is 244. Of these, 232 represent the states and union territories and twelve members, being specialists in the fields of literature, science, art and social service, are nominated by the President.

Lok Sabha

The Lok Sabha as constituted at present consist of 544 members. Of these 525 are directly elected from 22 states and 17 from nine union territories. Two members are nominated by the President to represent the Anglo-Indian community, if that community is not adequately represented in the House.

The number of seats for each state is so allocated that the ratio between the number and the population of the state is, as far as practicable, the same for all the states. The allocation of seats in the present Lok Sabha is based on the 1971 census and, under the 42nd Amendment of the Constitution (1976), will continue to be so based until figures of the first census taken after 2000 AD become available. The term of the Lok Sabha, unless sooner dissolved, is for five years

TABLE 3·1

LOK SABHA AND ITS SPEAKER

	LOK SABHA		SPEAKER[1]		
	Date of first meeting after its constitution	Date of dissolution	Name	From	To
First Lok Sabha	13 May 1952	4 April 1957[2]	Ganesh Vasudev Mavalankar (1888-1956) M. Ananthasayanam Ayyangar (1891-1978)	15 May 1952 8 March 1956	27 February 1956[3] 10 May 1957
Second Lok Sabha	10 May 1957	31 March 1962[4]	M. Ananthasayanam Ayyangar . . .	11 May 1957	16 April 1962
Third Lok Sabha	16 April 1962	3 March 1967[5]	Hukam Singh (1895-1983) . . .	17 April 1962	16 March 1967
Fourth Lok Sabha	16 March 1967	27 December 1970[6]	Neelam Sanjiva Reddy . . . . Dr Gurdial Singh Dhillon . . .	17 March 1967 8 August 1969	19 July 1969[7] 19 March 1971
Fifth Lok Sabha	19 March 1971	18 January 1977[8]	Dr. Gurdial Singh Dhillon . . . Bali Ram Bhagat	22 March 1971 5 January 1976	1 December 1975[9] 25 March 1977
Sixth Lok Sabha	25 March 1977	22 August 1979[10]	Neelam Sanjiva Reddy . . . . K.S. Hegde	26 March 1977 21 July 1977	13 July 1977[11] 21 January 1980
Seventh Lok Sabha	21 January 1980	—	Dr. Bal Ram Jakhar	22 January 1980	Till date

1. Under Article 94 of the Constitution, in case of dissolution of the Lok Sabha, the Speaker does not vacate his office until immediately before the first meeting of the House after the dissoluton.
2. Dissolved 38 days earlier than its normal life.
3. Died.
4. Dissolved 40 days earlier than its normal life.
5. Dissolved 44 days before the expiry of its term.
6. Dissolved one year and 79 days before the expiry of its term.
7. Resigned.
8. The term of the Lok Sabha, which was to expire on 18 March 1976 was extended by one year up to 18 March 1977 by the House of the People (Extension of Duration) Act, 1976. The term was extended for a further period of one year up to 18 March 1978 by the House of the People (Extension of Duration) Amendment Act, 1976. However, the House was dissolved after having been in existence for a period of 5 years 10 months and 6 days.
9. Resigned.
10. The House was dissolved after having been in existence for a period of two years, four months and 28 days.
11. Resigned.

TABLE 3·2

ALLOCATION OF SEATS IN TWO HOUSES OF PARLIAMENT AND PARTY POSITION IN LOK SABHA

(AS ON 16 APRIL 1984)

State/Union Territory	No. of seats in Rajya Sabha	LOK SABHA									
		Seats	Cong. (I)	CPI (M)	Lok Dal	Janata	BJP	Other Parties	Unattached	Total	Vacancies
STATES											
Andhra Pradesh	18	42	38	—	—	—	—	3(1)	1	42	—
Assam	7	14	7	—	—	—	—	—	—	7	7
Bihar	22	54	30	—	—	7	2	9(2)	3	51	3
Gujarat	11	26	23	—	—	1	—	—	2	26	—
Haryana	5	10	6	—	2	1	1	—	—	10	—
Himachal Pradesh	3	4	3	—	—	—	—	—	—	3	1
Jammu and Kashmir	4	6	2	—	—	—	—	3(3)	1	6	—
Karnataka	12	28	26	—	—	1	—	—	—	27	1
Kerala	9	20	6	6	—	—	—	6(4)	2	20	—
Madhya Pradesh	16	40	31	—	—	—	6	—	1	38	2
Maharashtra	19	48	39	—	—	6	2	—	—	47	1
Manipur	1	2	1	—	—	—	—	1(5)	—	2	—
Meghalaya	1	2	1	—	—	—	—	—	1	2	—
Nagaland	1	1	1	—	—	—	—	—	—	1	—
Orissa	10	21	20	—	—	1	—	—	—	21	—
Punjab	7	13	10	—	—	—	—	—	1	11*	1
Rajasthan	10	25	18	—	1	2	3	1(6)	—	25	—
Sikkim	1	1	1	—	—	—	—	—	—	1	—
Tamil Nadu	18	39	20	—	—	—	—	18(7)	1	39	—
Tripura	1	2	—	2	—	—	—	—	—	2	—
Uttar Pradesh	34	85	46	—	22	3	1	12(8)	1	85	—
West Bengal	16	42	4	28	—	—	—	10(9)	—	42	—

TABLE 3.2—(Contd.)

State/Union territory	No. of seats in Rajya Sabha	LOK SABHA									
		Seats	Cong. (I)	CPI (M)	Lok Dal	Janata	BJP	Other Parties	Unatta-ched	Total	Vacan-cies
UNION TERRITORIES											
Andaman and Nicobar Islands	—	1	1	—	—	—	—	—	—	1	—
Arunachal Pradesh	1	2	2	—	—	—	—	—	—	2	—
Chandigarh	—	1	1	—	—	—	—	—	—	1	—
Dadra and Nagar Haveli	—	1	—	—	—	—	—	—	—	1	—
Delhi	3	7	6	—	—	—	1	—	—	7	—
Goa, Daman and Diu	—	2	2	—	—	—	—	—	—	2	—
Lakshadweep	—	1	1	—	—	—	—	—	—	1	—
Mizoram	1	1	—	—	—	—	—	—	1	1	—
Pondicherry	1	1	1	—	—	—	—	—	—	1	—
Nominated (Anglo-Indian)	—	2	—	—	—	—	—	—	2	2	—
Nominated by President under Article 80(1)(a) of the Constitution	12	—	—	—	—	—	—	—	—	—	—
Total	244	544	348	36	25	22	16	63	17	527*	16

1. Telugu Desam—2; Congress (S)—1.
2. CPI—6; Congrèss (S)—2; Congress (J)—1
3. National Congress—3.
4. CPI—2; Muslim League—2; Congress(S)—1; DSP—1.
5. CPI—1.
6. Congress (S)—1.
7. DMK—14; AIADMK—3; Muslim League—1.
8. DSP—8; Janavadi—2; CPI—1; Congress(J)—1.
9. RSP—4; Forward Block—3; CPI—3.

* Excluding the Speaker.

from the date appointed for its first meeting. Seven Lok Sabhas have been constituted so far. The term of each Lok Sabha and its Speaker(s) is given in table 3.1.

The state-wise allocation of seats in the two Houses and the party position in the Lok Sabha is given in table 3.2.

Qualifications for Membership of Parliament

In order to be chosen a Member of Parliament, a person must be a citizen of India; must be not less than 30 years of age in the case of the Rajya Sabha and not less than 25 years of age in the case of the Lok Sabha. Additional qualifications may be prescribed by Parliament by law.

Parliamentary Privileges

The Constitution provides for freedom of speech in Parliament. No Member of Parliament can be held liable to any proceedings in any court in respect of anything said or any vote given by him in Parliament or any of its Committees. In other respects, the powers, privileges and immunities of each House of Parliament and of the Members and the Committees of each House shall be such as may from time to time be defined by Parliament by law, and, until so defined, shall be those of that House and of its Members and Committees immediately before 20 June 1979.

The validity of any proceedings in Parliament shall not be called in question on the ground of any irregularity of procedure.

Leaders of Opposition in Parliament

Giving cognizance to the important role of the Leader of Opposition in Parliamentary democracy, statutory recognition has been accorded to the Leaders of Opposition in the Rajya Sabha and the Lok Sabha.[1] They also get salary and certain facilities to enable them to discharge their functions in Parliament. Necessary legislation for this was enacted in July 1977.

Functions and Powers of Parliament

The main functions of Parliament are to make laws for the country and make finances available to the Government for the services of the state. The Council of Ministers is collectively responsible to the Lok Sabha. Parliament is also vested with the powers to impeach the President and to remove judges of the Supreme Court and High Courts, the Chief Election Commissioner and the Comptroller and Auditor-General in accordance with the procedure laid down in the Constitution.

All legislation requires the consent of both Houses of Parliament. In the case of money bills, however, the will of the Lok Sabha prevails. Delegated legislation is also subject to review and control by Parliament. All financial legislation must be recommended by the President but the Lok Sabha alone has the power to vote the Demands for Grants presented by the Government. In times of an emergency, and also in some other contingencies laid down in the Constitution, the legislative authority of Parliament also extends to matters enumerated in the State List. The power to amend the Constitution also rests primarily with Parliament, except in some cases where ratification by the legislatures of not less than one-half of the states is prescribed by the Constitution. A list of laws made by Parliament during 1983 is given in table 25.2.

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[1] In the Seventh Lok Sabha, so far no Leader of the Opposition has been recognised, as none of the parties in the Opposition commands the requisite strength in the House.

Parliamentary Committees

To assist Parliament in its deliberations, Parliamentary Committees are appointed or elected by the respective Houses on a motion made or are nominated by their presiding officers.

Broadly, these committees are of two kinds, standing committees and ad hoc committees. The former are elected or appointed every year or periodically and their work goes on more or less on a continuous basis. The latter are appointed *ad hoc,* that is as and when the need arises. They cease to exist as soon as they complete the work assigned to them.

Standing Committees : Among the standing committees of the Lok Sabha, the three financial committees, *viz., Committee on Public Accounts, Estimates Committee and Committee on Public Undertakings* —constitute a distinct class and between them keep a vigil over-Government spending and performance.

The *Public Accounts Committee* scrutinises the Appropriation and Finance Accounts of the Government of India and the reports of the Comptroller and Auditor-General. It ensures that public money is spent in accordance with Parliament's decision and calls attention to cases of waste, extravagance, loss or nugatory expenditure. The *Estimates Committee* reports on 'what economies, improvements in organisation, efficiency or administrative reform consistent with the policy underlying the estimates' may be effected. It also examines whether the money is well laid out within the limits of the policy implied in the estimates and suggests the form in which the estimates shall be presented to Parliament. The *Committee on Public Undertakings* examines the reports and accounts of certain specified public undertakings and reports of the Auditor-General, if any. It also examines whether the public undertakings are being run efficiently and managed in accordance with sound business principles and prudent commercial practices. The control exercised by these committees is of a continuous nature. They gather information through questionnaires, memoranda from representative non-official organisations and knowledgeable individuals, on-the-spot study of organisations and oral examination of official and non-official witnesses.

The other standing committees are : (i) *Committee of Privileges*—examines any question of privilege referred to it by the House or the Speaker; (ii) *Committee on Petitions*—examines petitions on bills and on matters of public interest and also entertains representations on central subjects; (iii) *Committee on Subordinate Legislation*—scrutinises whether the powers to make rules, regulations, sub--rules and bye-laws conferred by the Constitution or delegated by Parliament are being properly exercised by the Government within scope of such delegation; (iv) *Committee on Government Assurances*—keeps track of the assurances given by ministers on the floor of the House and pursues them till they are implemented; (v) *Committee on Papers Laid on the Table*—examines all the papers laid on the Table of the House by ministers; (vi) *Business Advisory Committee*—recommends the allocation of time for all items to be brought before the House; (vii) *Committee on Private Members' Bills and Resolutions*—deals with classification and allocation of time to bills from private members, recommends allocation of time for discussion of private members' resolutions, and examines Constitution amendment bills given notice of by private members before their introduction in the Lok Sabha; (viii) *Committee on Absence of Members from the Sittings of the House*—considers leave applications of members; (ix) *General Purposes Committee*—considers and advises the Speaker on matters concerning the affairs of the House; (x) *House Committee*—deals with residential ascommodation, medical aid and other amenities to the members of Parliament; (xi) *Library Committee*—advises the Speaker on matters pertaining to the maintenance and upkeep of the Parliament library; (xii) *Rules Committee*—considers matters of procedure and conduct of business in the House and recommends any amendments or additions to the rules of procedure; (xiii) *Committee on the Welfare of Scheduled Castes and Scheduled Tribes*—considers matters relating to their welfare and watches whether the constitutional safeguards given to them are being properly implemented; (xiv) *Joint Committee on Salaries and Allowances of Members of Parliament*—deals with salaries and allowances, frames rules in respect of matters like medical, housing, telephone, postal facilities, etc.; and (xv) *Joint Committee on Offices of Profit*—examines the composition and character of the boards and other bodies appointed by the Central and state governments in order to recommend which offices ought to or ought not to disqualify a person from being a member of either House of Parliament.

Ad hoc Committees : *Ad hoc* committees are constituted from time to time either by Lok Sabha or by the Speaker to enquire into and report on specific subjects. Examples of such committees are the Select or Joint Committees on bills which are appointed to consider and report on particular bills and the Railway Convention Committee.

The Rajya Sabha also has a similar Committee structure except for the fact that it does not have the financial committees and a few other committees, namely, the Committee on Absence of Members, the Committee on Private Members' Bills and Resolutions and the Committee on the Welfare of Scheduled Castes and Scheduled Tribes. Members of the Rajya Sabha are, however, associated with two of the financial committees, *viz.*, the *Committee on Public Accounts* and the *Committee on Public Undertakings,* and with the *Committee on the Welfare of the Scheduled Castes and Scheduled Tribes.*

Consultative Committees

There are consultative committees for different ministries and departments, which provide a forum for discussion between members of Parliament and the ministries. These committees function in accordance with the guidelines evolved by the Government in consultation with leaders of opposition parties and groups.

Implementation of Assurances

The Department of Parliamentary Affairs culls out assurances, promises, undertakings, etc., given by ministers in both the Houses of Parliament from the daily proceedings and forward them to concerned ministries|departments for implementation and necessary information is collected from concerned ministries|departments and after due scrutiny, statements showing action taken by the Government in implementation of assurances are laid periodically on the table of the Houses by the Minister of Parliamentary Affairs.

Youth Parliament

The Youth Parliament scheme, which was started in pursuance of the recommendation of the Fourth All India Whips Conference aims at imbibing the spirit of discipline and tolerance, cultivating character in the young minds, strengthening the roots of democracy, inculcating healthy habits of discipline, tolerance of views of others and also to acquaint the younger generation with the practices and procedure of the Parliament of the country.

The Department imparts necessary training to teachers of all participating schools.

MINISTRIES|DEPARTMENTS OF THE GOVERNMENT The Union Government consists of a number of Ministries|Departments, the number and character varying from time to time on factors such as volume of work, importance attached to certain items, change of orientation, political expediency, etc. On 15 August 1947 the number of Ministries in the Central Government was eighteen. At present, according to the Allocation of Business Rules, 1961 the Government consists of the following Ministries|Departments.

1. Ministry of Agriculture
   (i) Department of Agriculture and Cooperation
   (ii) Department of Agricultural Research and Education
2. Ministry of Chemicals and Fertilizers
3. Ministry of Commerce
   (i) Department of Commerce
   (ii) Department of Textiles
4. Ministry of Communications
5. Ministry of Defence
   with a Department of Defence Production,
   a Department of Defence
   Supplies and a Department of
   Defence Research and Development
   within the Ministry
6. Ministry of Education and Culture
   (i) Department of Education
   (ii) Department of Culture
7. Ministry of Energy
   (i) Department of Petroleum
   (ii) Department of Power
   (iii) Department of Coal
   (iv) Department of Non-conventional Energy Sources
8. Ministry of External Affairs
9. Ministry of Finance
   (i) Department of Economic Affairs
   (ii) Department of Expenditure
   (iii) Department of Revenue
10. Ministry of Food and Civil Supplies
    (i) Department of Food
    (ii) Department of Civil Supplies
11. Ministry of Health and Family Welfare
    (i) Department of Health
    (ii) Department of Family Welfare
12. Ministry of Home Affairs
    with a Department of Official
    Language and the Department of
    Personnel and Administrative Reforms
    within the Ministry

13. Ministry of Industry
    (i) Department of Industrial Development
    (ii) Department of Heavy Industry
14. Ministry of Information and Broadcasting
15. Ministry of Irrigation
16. Ministry of Labour and Rehabilitation
    (i) Department of Labour
    (ii) Department of Rehabilitation
17. Ministry of Law, Justice and Company Affa
    (i) Department of Legal Affairs
    (ii) Legislative Department
    (iii) Department of Justice
    (iv) Department of Company Affairs
18. Ministry of Planning
    with a Department of Statistics
19. Ministry of Railways
    Railway Board
20. Ministry of Rural Development
21. Ministry of Shipping and Transport
22. Ministry of Social Welfare
23. Ministry of Steel and Mines
    (i) Department of Steel
    (ii) Department of Mines
24. Ministry of Tourism and Civil Aviation
    (i) Department of Tourism
    (ii) Department of Civil Aviation
25. Ministry of Works and Housing
26. Department of Atomic Energy
27. Department of Electronics
28. Department of Environment
29. Department of Ocean Development
30. Department of Parliamentary Affairs
31. Department of Science and Technology
32. Department of Space
33. Department of Sports
34. Department of Supply
35. Cabinet Secretariat
36. President's Secretariat
37. Prime Minister's Office
38. Planning Commission

THE STATES

The system of government in the states closely resembles that of the Union.

EXECUTIVE

The state executive consists of the Governor and the Council of Ministers with the Chief Minister at its head.

Governor

The Governor of a state is appointed by the President for a term of five years and holds office during his pleasure. Only Indian citizens above 35 years of age are eligible for appointment to this office. The executive power of the state is vested in the Governor.

The Council of Ministers, with the Chief Minister at the head, aids and advises the Governor in the exercise of his functions except in so far as he is by or under the Constitution required to exercise his functions or any of them in his discretion. Some of the discretionary powers of the Governors of north-eastern states specifically stated in the Constitution, relate to certain matters concerning administration of the tribal areas in Assam, Meghalaya and Tuensang area of Nagaland and the maintenance of law and order in Nagaland. In the case of Sikkim the Governor has been given special responsibility for peace and for an equitable arrangement for ensuring the social and economic advancement of different sections of the population of Sikkim. All Governors while discharging such constitutional functions as the appointment of the Chief Minister of a state or sending a report to the President about the failure of the constitutional machinery in a state or in respect of matters relating to the assent to a bill passed by the legislature, have to exercise their own judgment.

Council of Ministers

The Chief Minister is appointed by the Governor, who also appoints other ministers on the advice of the Chief Minister. The Council of Ministers is collectively responsible to the legislative assembly of the state.

Planning

At the state level, an inter-departmental committee of secretaries headed by the Chief Secretary or Secretary in-charge of planning coordinates development programmes. Generally, the functions of coordination for planning and implementation of programmes in the districts are performed by an officer commonly known as District Development Commissioner. As a rule, a committee of the state cabinet under the Chief Minister provide overall guidance and direction. At the state level, the apex body is the state planning board, which mostly consists of the Chief Minister as chairman and ministers and other eminent non-officials as members.

LEGISLATURE

For every state, there is a legislature which consists of the Governor and one House or, as the case may be, two Houses. In Andhra Pradesh, Bihar, Jammu and Kashmir, Karnataka, Maharashtra, Tamil Nadu and Uttar Pradesh, there are two Houses known as the Legislative Council and the Legislative Assembly. In the remaining states, there is only one House known as the Legislative Assembly. Parliament may, by law, provide for the abolition of an existing legislative council or for the creation of one where one does not exist, if the proposal is supported by a resolution of the legislative assembly concerned.

Legislative Council

The legislative council (Vidhan Parishad) of a state comprises not more than one-third of the total number of members in legislative assembly of the state and in no case less than 40 members.[1] About one-third of the members of the council are elected by members of the legislative assembly from amongst persons who are not its members, one-third by electorates consisting of members of municipalities, district boards and other local authorities in the states, one-twelfth by electorates consisting of persons who have been, for at least three years, engaged in teaching in educational institutions within the state not lower in standard than secondary schools and a further one-twelfth by registered graduates of more than three years' standing. The remaining members are nominated by the Governor from among those who have distinguished themselves in the fields of literature, science, art, co-operative movement and social service. The legislative councils are not subject to dissolution but one-third of their members retire every second year.

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[1] The legislative council of Jammu and Kashmir has 36 members *vide* Section 50 of the Constitution of Jammu and Kashmir.

Legislative Assembly

The legislative assembly (Vidhan Sabha) of a state consists of not more than 500 and not less than 60 members[1] chosen by direct election from territorial constituencies in the state. The demarcation of territorial constituencies is to be done in such a manner that the ratio between the population of each constituency and the number of seats allotted to it, as far as practicable, is the same throughout the state. The term of an assembly is five years unless it is dissolved earlier.

Powers and Functions

The state legislature has exclusive powers over the subjects enumerated in List II of the Seventh Schedule to the Constitution and concurrent powers over those enumerated in List III. The financial powers of the legislature include authorisation of all expenditure, taxation and borrowing by the state government. The legislative assembly alone has the power to originate money bills. The legislative council can make only recommendations in respect of changes it considers necessary within a period of fourteen days of the receipt of money bill from the assembly. The assembly can accept or reject the recommendations.

Reservation of Bills

The Governor of a state may reserve any bill for the consideration of the President. Bills relating to subjects like compulsory acquisition of property, measures affecting the powers and the position of High Courts, and imposition of taxes on the storage, distribution and sale of water or electricity in inter-state river or river valley development projects should necessarily be so reserved. No bill seeking to impose restrictions on inter-state trade can be introduced in a state legislature without the previous sanction of the President.

Control over Executive

The state legislatures, apart from exercising the usual power of financial control, use all the normal parliamentary devices like questions, discussions, debates, adjournment and no-confidence motions and resolutions to keep a watch over the day-to-day work of the executive. They also have their Committees on Estimates and Public Accounts to ensure that grants sanctioned by the legislatures are properly utilised.

UNION TERRITORIES

The union territories are administered by the President, acting to such extent as he thinks fit, through an administrator appointed by him.

The Administrators of Andaman and Nicobar Islands, Arunachal Pradesh, Delhi, Goa, Daman and Diu, Mizoram and Pondicherry are designated as Lt.-Governors while the Administrator of Chandigarh is designated as Chief Commissioner. The Lt.-Governor of Goa, Daman and Diu is concurrently the administrator of Dadra and Nagar Haveli. Lakshadweep has a separate administrator.

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[1] The legislative assembly of Sikkim has 32 members *vide* Article 371 F of the Constitution.

The union territories of Arunachal Pradesh, Goa, Daman and Diu, Mizoram and Pondicherry have legislative assemblies and Council of Ministers. Delhi has a Metropolitan Council and an Executive Council. Andaman and Nicobar Islands have a Pradesh Council and Counsellors appointed from among the members of the Pradesh Council.

The legislative assemblies of the union territories may make laws with respect to matters in the state field, namely, those enumerated in List II or List III in the Seventh Schedule insofar as they are applicable in relation to union territories. Parliament can also make laws with respect to such matters for the union territories.

The Metropolitan Council in Delhi and the Pradesh Council in Andaman and Nicobar Islands have the right to discuss and make recommendations about matters insofar as they relate to Delhi and Andaman and Nicobar Islands, respectively.

ZONAL COUNCILS

The states and union territories on the mainland, except those in the north-eastern region, are grouped into zones. Each zone has a high-level advisory body known as the Zonal Council which provides the forum for discussing matters of common interest to the states and union territories in that zone. Haryana, Himachal Pradesh, Jammu and Kashmir, Punjab, Rajasthan and the union territories of Chandigarh and Delhi are in northern zone. The central zone comprises Madhya Pradesh and Uttar Pradesh. Bihar, Orissa, Sikkim and West Bengal are in the eastern zone. Gujarat and Maharashtra and the union territories of Goa, Daman and Diu, and Dadra and Nagar Haveli form western zone. The southern zone comprises Andhra Pradesh, Karnataka, Kerala and Tamil Nadu and the union territory of Pondicherry.

For the north eastern region there is a body created under the North Eastern Council Act, 1971 to deal with matters of common interest in the north eastern states and union territories of Assam, Meghalaya, Manipur, Nagaland, Tripura, Arunachal Pradesh and Mizoram. The North Eastern Council, which came into being in August 1972 recommends schemes of common interest to more than one state or of importance to the region as a whole. It formulates unified and co-ordinated regional plans which supplement the state plans and also recommends the manner in which projects or schemes for the benefit of two or more states are to be executed, managed or maintained or their benefits shared or expenditure incurred.

Since its inception the Council has implemented a number of schemes aimed at developing required infrastruccure for speedier economic development of the region with a cumulative investment of about Rs 404 crore in various sectors.

LOCAL GOVERNMENT

Municipal Corporations

In most of the states, corporations have been established for major cities under specific acts of the state legislature. These are headed by elected mayors. The administration of the city vests in an elected council and the powers of the corporation are exercised by three authorities : (i) general council of the corporation, (ii) standing committees, and (iii) the municipal commissioner/chief executive officer. The standing committees are elected by the council and carry out most of the work of administration including taxation, finance and preparation of budget, engineering work, health and education services. The power of sanctioning estimates and contracts vests in the three authorities up to specified amounts. The general council appoints most of the officers of the corporation but the municipal commissioner is appointed by the state government. The executive powers of the corporation generally vest in the municipal commissioner, who prescribes the duties of the various officers, and supervises their work. The functions of the municipal corporation include public safety, health, education and other conveniences of the citizens as well as construction and maintenance of water works and sewerage, streets and bridges, parks and recreation grounds, markets and shopping centres and so on. Major corporations also undertake works of housing and land development. There is, however, a growing practice of entrusting these works to special urban development authorities. There were 67 municipal corporations in the country as on 1 April 1984. The Calcutta Corporation Act has been recently amended to provide for the system of Mayor-in-Council.

Municipal Committee and Council

For all other towns and cities, there are municipalities, having elected boards or councils which in turn elect their own presidents. All the members of a municipality constitute general body, which decides all questions of policy and important details of municipal administration. The powers of passing the budget, imposing taxes, voting expenditure and making rules and regulations, vest in the general body. The municipal council, however, mostly functions through committees which exercise delegated powers or make recommendations to the council. The day-to-day work of the municipality is carried on by an executive officer drawn sometimes from state civil service or a state-wise cadre of municipal officers. In many states, however, the municipal councils continue to appoint their own executive officers and other officials.

Local Self-Government in Districts

The system of *Panchayati Raj*, which was introduced in 1959, is generally a three-tier structure of local self-government at the village, block and district levels. The states are, however, free to make changes in the structure to suit local conditions. All *Panchayati Raj* bodies are organically linked up. Special representation on these bodies is given to backward classes, women and co-operative societies.

ELECTION COMMISSION

The superintendence, direction and control of the preparation of the electoral rolls for, and the conduct of elections to Parliament and to the legislature of every state and of elections to the offices of President and Vice-President is vested in the Election Commission, which is a constitutional authority set up in pursuance of article 324(1) of the Constitution. Though clause (2) of article 324 provides that the Election Commission shall consist of the Chief Election Commissioner and such number of other Election Commissioners, if any, as the President may from time to time appoint, the Commission has since its inception, consisted only of the Chief Election Commissioner. The independence of the Chief Election Commissioner is sought to be protected by a special constitutional provision to the effect that he shall not be removed from his office except in like manner and on the like grounds as a judge of the Supreme Court, and his conditions of service shall not be varied to his disadvantage after his appointment.

The office of the Chief Election Commissioner is held by R. K. Trivedi from 18 June 1982.

The plenary powers vested in the Election Commission under article 324 of the Constitution are supplemented further by Acts of Parliament, namely, Representation of the People Acts, 1950 and 1951, the Presidential and Vice-Presidential Elections Act, 1952, the Government of Union Territories Act, 1963, the Delhi Administration Act, 1966 and the Rules and orders made thereunder.

Electoral Rolls

The parliamentary system of Government both at the Centre and in the states in India is based on adult suffrage whereby all citizens of India who are not less than 21 years of age and are not disqualified under the Constitution or any law made by the appropriate legislature on certain grounds like non-residence, unsoundness of mind, crime, illegal or corrupt practices have the right to be registered as voters in any election to the Lok Sabha and legislative assemblies of the states. The number of electors on the electoral rolls in the beginning of 1984 was 38.50 crore approximately.

General Elections

The first general election in India on the basis of adult suffrage was held in 1951-52. This was a simultaneous election both for the Lok Sabha and all the 22 state legislative assemblies. The second general election held in 1957 shortly after the reorganisation of states was also a simultaneous election to the Lok Sabha and all the 13 state legislative assemblies. By the time the third general election was held in 1962, elections to the state legislative assemblies of Kerala and Orissa had become out of step with the general election to the Lok Sabha with the result that simultaneous elections could not be held in these two states. Similarly in 1967, simultaneous elections could not be held in Nagaland and Pondicherry along with the fourth general election to the Lok Sabha. After 1967, general elections to most of the legislative assemblies had to be held earlier than normally due with the result that Orissa, Tamil Nadu and West Bengal had simultaneous elections to the Lok Sabha and state legislative assemblies at the fifth general elections held in 1971. In 1977 Kerala was the only state where general election to the state legislative assembly was held simultaneously with the sixth general election to the Lok Sabha. When the seventh general election to the Lok Sabha was held in January 1980, elections to constitute new legislative assemblies were held simultaneously only in Manipur and the union territories of Arunachal Pradesh, Goa, Daman and Diu and Pondicherry. The term of the Lok Sabha which was constituted after this general election extends upto 20 January 1985, and accordingly the eighth general election to the Lok Sabha has been announced. Polling will be held on 24, 27 and 28 December 1984, in 20 states and 9 union territories except in Assam and Punjab. The election for the legislative assemblies of Tamilnadu, Manipur, Arunachal Pradesh and Goa, Daman and Diu will also be held simultaneously.

Political Parties

Political parties play a significant part in elections held under the parliamentary system. However, there is no law at present regarding the formation and functioning of political parties in India. The fundamental right to form associations which is guaranteed by article 19 of the Constitution remains unfettered although under clause (4) of the article, it is open to Parliament to make a law imposing reasonable restrictions on the exercise of the right in the interest of sovereignty and integrity of India or public order or morality. The Representation of the People Acts also do not refer to political parties even from an electoral point of view except in regard to one or two ancillary matters only. It, therefore, became necessary for the Election Commission to evolve a procedure by which it could "recognise" political parties for the limited purpose of regulating the allotment of exclusive election symbols to those which were so "recognised". In 1968, the Commission issued the Election Symbols (Reservation and Allotment) Order, 1968 to "provide for specification, reservation, choice and allotment of symbols at elections in parliamentary and assembly constituencies, for the recognition of political parties in relation thereto and for matters connected therewith." Clause 6 of the aforesaid order specifies the following conditions to be fulfilled by a political party before it could be recognised by the Commission.

"A political party shall be treated as a recognised political party in a state if, and only if, either the conditions specified in clause (A) are, or the condition specified in clause (B) is, fulfilled by that party and not otherwise, that is to say —

(A) that such party —

(a) has been engaged in political activity for a continuous period of five years; and

(b) has, at the general election in that state to the House of the People, or as the case may be, to the legislative assembly for the time being in existence and functioning, returned —

either (i) at least one member to the House of the People for every twenty-five members of that House or any fraction of that number elected from that state; or (ii) at least one member to the legislative assembly of that state for every thirty members of that assembly or any fraction of that number;

(B) that the total number of valid votes polled by all the contesting candidates set up by such party at the general election in the state to the House of the People, or as the case may be, to the legislative assembly, for the time being in existence and functioning (excluding the valid votes of each such contesting candidates in a constituency as has not been elected and has not polled at least one-twelfth of the total number of valid votes polled by all the contesting candidates in that constituency), is not less than four per cent, of the total number of valid votes polled by all the contesting candidates at such general election in the state (including the valid votes of those contesting candidates who have forfeited their deposits)".

A recognised political party has been classified either as a "National Party" or a "State Party" in paragraph 7 of the order. If a political party is recognised in four or more states, it is deemed to be a

"National Party" and a political party recognised in less than four states, is a "State Party" in the state or states in which it is recognised as such.

The names of the political parties recognised as national and state parties are as follows :

National Parties

1. Bharatiya Janata Party; 2. Communist Party of India; 3. Communist Party of India (Marxist); 4. Indian National Congress; 5. Janata Party; 6. Lok Dal and 7. Indian Congress (Socialist).

State Parties

1. All India Anna Dravida Munnetra Kazhagam; 2. All India Forward Bloc; 3. All India Muslim League; 4. All Parties Hill Leaders' Conference; 5. Dravida Munnetra Kazhagam; 6. Jammu and Kashmir National Conference; 7. Jammu and Kashmir Peoples' Conference; 8. Kerala Congress; 9. Kerala Congress (J); 10. Kuki National Assembly; 11. Maharashtrawadi Gomantak; 12. Manipur Peoples' Party; 13. Muslim League; 14. Naga National Democratic Party; 15. Peasants' and Workers Party of India; 16. People's Conference; 17. People's Party of Arunachal; 18. Plains Tribals Council of Assam; 19. Public Demands Implementation Convention; 20. Revolutionary Socialist Party; 21. Shiromani Akali Dal; 22. Sikkim Congress (R); 23. Sikkim Prajatantra Congress; 24. Tripura Upajati Juba Samiti; 25. Hill State Peoples' Democratic Party; 26. Indian Congress (J) and 27. Telugu Desam.

4 DEFENCE

India's defence policy aims at promoting and sustaining durable peace in the sub-continent by means of negotiations and co-operation among various countries in the region and at the same time equipping the defence forces as safeguards against aggression.

The Supreme Command of the Armed Forces is vested in the President of India. The responsibility for national defence, however, rests with the Cabinet. The Defence Minister is responsible to Parliament for all matters concerning defence. The administrative and operational control of the armed forces is exercised by the Ministry of Defence and the three Services Headquarters. The Ministry of Defence acts as the central agency for ensuring a co-ordinated development of the three services, for conveying the Government of India's decision on policy matters to the three Services headquarters for implementation and for obtaining financial sanction for defence expenditure from Parliament.

ORGANISATION

The three Services function under their respective Chief's of Staff. As on 1 December 1984, the Chiefs of Staff were :

Chief of the Army Staff : General A. S. Vaidya
Chief of the Naval Staff : Admiral R. H. Tahiliani
Chief of the Air Staff : Air Chief Marshal L. M. Katre

Army

At the Army Headquarters in New Delhi, the Chief of the Army Staff is assisted by the Vice-Chief of the Army Staff and five other Principal Staff Officers-Deputy Chief of the Army Staff, Adjutant-General, Quartermaster-General, Master-General of Ordnance and Military Secretary and a Head of Branch, namely, Engineer-in-Chief.

The Army is organised into five Commands—Southern, Eastern, Western, Central and Northern—each under a General Officer Commanding-in-Chief of the rank of Lieutenant General. A General Officer Commanding-in-Chief is the Commander of a demarcated geographical area and has both field and static formations under his command. The major field formations are Corps, Division and Brigade commanded by a General Officer Commanding of the rank of Lieutenant General, General Officer Commanding of the rank of a Major General and a Brigadier respectively. The major static formations are Areas, Independent Sub Areas and Sub Areas. An Area is commanded by a General Officer Commanding of the rank of a Major General and an Independent Sub Area|Sub Area by a Brigadier.

The Army consists of a number of arms and services. These are : President's Body Guard, Armoured Corps, Regiment of Artillery, Corps of Engineers, Corps of Signals, Infantry, Army Service Corps, Military Nursing Service, Army Medical Corps, Army Dental Corps, Army Ordnance Corps, Corps of Electrical and Mechanical Engineers, Remount and Veterinary Corps, Military Farms Service, Army Education Corps, Intelligence Corps, Corps of Military Police, Army Physical Training Corps, Pioneers Corps, Army Postal Service Corps and Defence Security Corps.

Navy

The operational control of the Navy is exercised by the Naval Headquarters in New Delhi through a chain of three Commands.

At the Headquarters, the Chief of the Naval Staff is assisted by four Principal Staff Officers, namely, the Vice-Chief of the Naval Staff, Chief of Personnel, Chief of Material and Deputy Chief of the Naval Staff.

The Navy is organised into three Naval Commands under Flag Officers Commanding-in-Chief : Western Naval Command with headquarters at Bombay, Eastern Naval Command with headquarters at Vishakhapatnam and Southern Naval Command with headquarters at Cochin.

The Navy has two Fleets—the Western Fleet and the Eastern Fleet. The two Fleets consist of the aircraft-carrier, the refitted *INS Vikrant,* destroyers, frigates including some of the latest types of anti-submarine and anti-aircraft frigates, a squadron of anti-submarine patrol vessels, mine-sweeping squadrons, submarines, a submarine depot ship and smaller and specialised vessels which are under construction at various shipyards in the country. The Navy has a sizeable air wing with various types of fixed wing aircraft and helicopters. Besides, there are some survey ships, fleet tankers and a number of auxiliary craft. The survey units of the Navy carry out a survey of India's coast and approaches to the harbours. A Naval organisation is functioning at Port Blair to ensure the security of the Bay Islands. The Navy has taken over the responsibilities for maritime reconnaissance from the IAF and has also acquired some aircraft for the purpose.

The Naval Dockyard at Vishakhapatnam, which is one of the largest in Asia, and the Naval Dockyard at Bombay are being modernised for the maintenance and repairs of high technology equipment in modern warships. Since 1964, India has been building her own naval ships and craft. The construction programme of six Leander Class frigates has been completed with the commissioning of *INS Vindhyagiri* in 1981. The first of the two *Godavari* class ships, indigenously designed by the Indian Naval Design Organisation, have been launched at the Mazagaon Dock, Bombay.

The Navy's role has grown manifold in view of increasing economic interest to exploit the ocean wealth and of continued growth of merchant marine and fishing fleet. The recent developments in the Indian Ocean and in the neighbouring countries have also posed new challenges for which Naval plans have been oriented towards adequate coastal defence, ocean-going and under-water capabilities. The commissioning of the first indigenously designed frigate *INS Godavari,* built at Mazagaon Dock, Bombay and the commencement of Submarine Submarine Killer (SSK Submarine) construction in India are milestones in keeping with our enhanced maritime responsibilities.

Coast Guard

The Coast Guard was constituted as an armed force of the Union on 19 August 1978 under the Coast Guard Act to protect the maritime and other national interests in the maritime zone of India. The service is under the administrative control of the Ministry of Defence and its headquarters is located at New Delhi. The Director General, Coast Guard exercises operational control through three regional headquarters located in Bombay, Madras and Port Blair, who in turn have district headquarters|stations under them. It is envisaged to set up one district headquarter in each of the eight coastal states in the mainland and two in the Andaman and Nicobar Islands. During 1983-84 a Coast Guard Station at Vadinar (Gujarat) and a Fixed Wing Maritime Air Surveillance Squadron at Calcutta were also commissioned.

Being the principal agency for enforcement of all national enactments as are in force in the maritime zones of India, the available resources of the Coast Guard are deployed to check illegal fishing in our maritime zones by unauthorised foreign fishing vessels.

Coast Guard ships regularly assist the Customs authorities in their anti-smuggling operations. Coast Guard ships have also rendered assistance to merchant ships in distress. Coast Guard ships and personnel are actively involved in the drive to protect the Olive Ridley Sea-Turtles (Lapido Chalys Olivancea)—an endangered species and protected under the Wild Life (Protection) Act, 1972.

The Coast Guard is still in a formative stage and with the gradual increase in its force level, the area of operation and span of activities will spread.

Air Force

The Indian Air Force is organised into six Commands[1]. These are : Western Air Command, South-Western Air Command, Central Air Command, Eastern Air Command, Training Command and Maintenance Command.

At the Air Headquarters in New Delhi, the Chief of the Air Staff is assisted by the five Principal Staff Officers, namely, Vice-Chief of the Air Staff, Deputy Chief of the Air Staff, Air Officer-in-Charge (Administration), Air Officer-in-Charge (Maintenance) and Air Officer-in-Charge (Personnel). Each of them controls a group of directorates.

The Air Force fleet, which is made up of 45 squadrons, consists of a variety of fighters, fighter bombers, fighter intercepters, bombers, transport and logistics support aircraft. Among the fighter aircraft are SU-7s, Hunters, Ajeets, MiG-21s, MiG-23s and Jaguars. Canberras comprise the bomber fleet. The new combat aircraft, Jaguar, has been inducted into IAF to replace Hunters and Canberras. The transport fleet consists of AN-12s, Dakotas, Fairchild Packets, Caribous, Otters, Devons, Indian built HS-748s and recently acquired Boeing-737. An-32 aircraft is scheduled to replace Dakotas and Packets shortly. Dornier 228 has been identified to replace the aging Devon and Otter aircraft. Helicopters in use are MI-8s, Cheetahs and Chetaks, the last two being built in India. The aircraft used for training purposes are HT-2 Basic Trainer, HJT-16 (Kiran) Jet Trainer and HS-748 Transport Trainer; all built in India and the Polish Iskras. HAL has developed HPT-32 and Kiran Mk II as basic and applied trainer aircraft. These aircraft are likely to be inducted for service shortly.

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[1] The Southern Air Command with Trivandrum as its headquarters was in augurated by the Prime Minister on 20 July 1984.

The Government have decided to acquire Mirage-2000 from France as the combat aircraft of the eighties, with option to undertake indigenous manufacture of the aircraft, its engine and other systems. In addition, indigenous manufacture of MiG-27 aircraft of Soviet origin is being undertaken.

The IAF MI-8 helicopters were specially modified to undertake commitments for the Antarctica Expedition. These helicopters had gone with the expedition in the special ship *Fino-Polaris*, which sailed from Goa on 3 December 1983.

The Indian Air Force, which began humbly with four Westland Wapiti aircraft in Karachi in 1932 has come a long way since. It celebrated its golden jubilee in 1982. It has acquired a number of modern weapons to sharpen its combat teeth and is equipping selected airfields with ground control approach systems to enable landing in poor visibility. It is also updating communication facilities and navigational aids. It is fitting transport and multi-engined aircraft with modern avionic systems to ensure flight safety and optimise flight plans and is gradually replacing older avionic systems. The radar system is also being modernised to improve the air defence ground environment by replacement of older radars and introduction of automatic data handling systems.

The launching of Sqn Ldr Rakesh Sharma in Soyuz T-II on 3 April 1984, along with two Soviet cosmonauts marked the successful culmination of the Soviet offer for the first Indo-Soviet joint manned space flight. The various scientific experiments conducted by Sqn Ldr Sharma are expected to benefit the country immensely.

COMMISSIONED RANKS

The following are the commissioned ranks in the three services, each rank is shown opposite to its equivalent in the other service :

Army	Navy	Air Force
General . . .	Admiral	Air Chief Marshal
Lieutenant General . .	Vice Admiral	Air Marshal
Major General . . .	Rear Admiral	Air Vice Marshal
Brigadier . . .	Commodore	Air Commodore
Colonel . . .	Captain	Group Captain
Lieutenant Colonel . .	Commander	Wing Commander
Major . . .	Lieutenant Commander	Squadron Leader
Captain . . .	Lieutenant	Flight Lieutenant
Lieutenant . . .	Sub-Lieutenant	Flying Officer
Second Lieutenant . .	Acting Sub-Lieutenant	Pilot Officer

RECRUITMENT

Soldiers

A *Jawan* enters service at the age of 16. The upper age limit for entry for various categories varies between 20-25. In addition to the new recruiting system introduced in October 1981, under which candidates having the prescribed physical and medical standards have to appear in a literacy and physical efficiency test for selection, the procedure for conducting selection during recruiting tours has been modified recently. Selection tests are now held in interior areas as well as during the visits of recruiting parties. The process of selection is to be completed within two days and the candidate is to be sent to the regimental centres soon after selection. This modified procedure, apart from accelerating the pace of selection, saves the candidates of frequently visiting the recruiting offices.

Sailors

Recruitment for sailors in the Navy is done at over 64 regional recruiting offices all over the country.

Sailors are recruited from the age group of 15-20, the minimum educational qualification varying from the elementary stage (for cooks and stewards) to matriculates for artificer apprentices and direct entry sailors. The artificer apprentices are imparted highly skilled technical training in different naval establishments. Recruitment is also done of direct entry artificers, i.e., those who have secured a diploma in any branch of engineering (*viz.*, electrical|radio|mechanical|aeronautical|automobile) and who are in the age group of 18-22.

Depending upon the particular type of entry, recruitment is done twice|thrice annually, where candidates have to appear for written tests, interviews and a medical examination.

Airmen

In the Air Force, the minimum qualification for entry is matriculation or its equivalent and the age limit is 15-19, with a relaxation of two years for candidates having a qualification of XII or equivalent or higher examination with physics and mathematics, including a diploma in engineering. The candidates having the prescribed physical and medical standards have to appear in written tests, interviews and physical and medical tests.

The Air Force provides 40 technical and non-technical trades suited to the different aptitudes of the candidates. In order to ensure that the candidates do not have to travel long distances, the initial screening test is conducted at more than 80 centres.

TRAINING INSTITUTIONS

Sainik Schools

Sainik schools prepare boys academically, physically and mentally for entry into the National Defence Academy. There are 18 sainik schools in the country, one in each state, except in Nagaland, Meghalaya, Tripura and Sikkim. These schools are affiliated to the Central Board of Secondary Education and follow the 10 plus 2 pattern. Admission is made to class VI on the basis of an All India Entrance Examination. The total strength of boys at present is about 9,500.

Rashtriya Indian Military College

Run on the lines of public schools, Rashtriya Indian Military College, Dehra Dun, prepares boys who desire subsequently to choose a military career for entrance examination to the National Defence Academy.

National Defence Academy

The National Defence Academy (NDA), Khadakvasla, conducts a three-year combined basic military training course for the potential officers of the three services after which they receive specialist training at their respective service establishments. The cadets are also trained in academics to the degree level of an Indian university. Admission to the Academy is made on the basis of a qualifying bi-annual written examination conducted by the Union Public Service Commission at different centres in the country, followed by assessment by a Services Selection Board. Boys who have passed the higher secondary or an equivalent examination and are between 16 and 18½ years of age on the first day of the month in which the course starts are eligible for admission. They must be unmarried and should remain so during the period of their stay at the Academy.

Indian Military Academy

The Indian Military Academy (IMA), Dehra Dun, is the premier institution for training officers for the Army. Its intake includes cadets passing out of the National Defence Academy, Khadakvasla, who receive one year's training before being commissioned. The IMA holds 1½ years' course for higher age group graduates who have qualified in the Union Public Service Commission's examination and the Services Selection Board. Graduates selected for specialised commissions in various technical arms are given one year's training at the IMA. A year's training is also imparted at IMA to serving|regular army junior commissioned officers (JCOs) and non-commissioned officers, who have successfully completed the three-year training course at the Army Cadet College.

On completion of the training at IMA, these personnel are granted commission in the Army. Other ranks are selected earlier for their officer-like qualities and general academic educational standard.

The College of Combat, Mhow, conducts the higher command course, senior command course and junior command course. The College of Military Engineering, Kirkee, imparts training to officers and other ranks in all aspects of military engineering. Long courses of over two years duration are also conducted to train officers up to the degree standard. Military College of Telecommunication Engineering, Mhow, imparts basic and advanced technical training in telecommunications and signal tactics.

Defence Services Staff College

The Staff College, Wellington, provides training to officers of the Army, Navy and Air Force for holding staff appointments in their own Services as well as in inter-services headquarters. About 300 officers from the three services, including 26 foreign officers and 4 civilian officers are trained every year.

The Institute of Defence Management, Secunderabad, trains Service and civilian officers in modern defence management techniques.

National Defence College

The National Defence College, now 24 years old, is the only institution in the country dedicated to train and to create a nucleus of senior officers who, in this College, are made *au fait* with all the aspects affecting national security, so as to analyse the various factors concerning it and plan to safeguard it. The student community of the College encompasses defence services, civil services and the defence services of friendly foreign countries. To date 950 officers have graduated from this college.

Other Training Centres and Schools

The Armoured Corps Centre and School, Ahmadnagar, conducts training in the tactical handling of armoured fighting vehicles and their driving and maintenance. The School of Artillery, Deolali, provides training in field branch and air defence artillery. The Infantry Schools at Mhow and Belgaum conduct courses for infantry officers and men. The Army Ordnance Corps School, Jabalpur, imparts specialised training in the identification and preservation of all items, including ammunition and explosives stocked by the ordnance depots.

Some of the other Army training centres and schools are High Altitude Warfare School, Gulmarg; Army Service Corps School, Bareilly; EME School, Vadodara; Military College of Electronics and Mechanical Engineering, Secunderabad; Remount and Veterinary Corps Centre and School, Meerut; Army Education Corps Training College and Centre, Pachmarhi; Army School of Physical Training, Pune; Army|Air Transport Support School, Agra, the Army Clerks Training School, Aurangabad; Army Intelligence Training School and Depot, Pune and Corps of Military Police Centre and School, Bangalore. The foundation stone of an Air Defence and Guided Missile School was laid at Gopalpur-on-Sea on 25 April 1983.

Armed Forces Medical College

Armed Forces Medical College (AFMC) was established on 1 May 1948, as an institution for post-graduate medical education and research. A graduate wing to train students for the MBBS degree of Poona University was started in August 1962. From 1982 onwards the annual intake has been increased to 130 students (105 boys and 25 girls). All boys and five girls have permanent service liability whereas 20 girls have liability to serve as Short Service Commissioned Officers on graduation. The selection of students is made through an all India competition. Another notable landmark in the growth of the College was the addition of the College of Nursing in 1964 to impart training to 30 students annually, leading to the B. Sc. (Nursing) degree of Poona University.

Naval Training Establishments

The principal training centres for the officers and men of the Navy are located at Cochin. These impart training in gunnery, navigation torpedo and anti-submarine warfare, communications and aviation.

Mechanical engineers and artificers are trained at *INS Shivaji* at Lonavala (Maharashtra). Junior engineers and electrical officers of the service receive initial training at the Engineering College at Lonavala.

INS Valsura at Jamnagar, trains the officers and men of the electrical branch of the service. With most of the ships now fitted with sophisticated electronic equipment, the training at this training establishment has been geared to meet the present requirements of the Navy.

New recruits on joining the Navy are trained at *INS Chilka*, near Bhubaneswar and at *INS Mandovi*, Goa. On completion of their courses they become sailors.

To meet the demand of increasing training requirements, the Naval Academy which is presently located at Cochin, is planned to be shifted to Ezhimalama in Cannanore district.

ir Force Training nstitutions

The basic stage of flying training (stage I) for trainee pilots is imparted at the Air Force Academy, Hyderabad and the advanced flying training (stage II) at Air Force Station, Bidar and Air Force Station, Hakimpet. The trainees are inducted from four sources *viz.*, NDA, ex-Airmen, NCC and direct entry selection by the UPSC. All non-NDA trainees undergo pre-course training at Air Force Administrative College, Coimbatore, before commencing the basic stage of flying training. Wings and Commission are awarded on completion of the stage II (advanced stage) of flying training. Thereafter, these trainee officers are trifurcated for the stage III (applied stage) of training into fighter stream at Hunter and MiG operational conversion units, transport stream at Air Force Station, Yelahanka and helicopter stream at the Helicopter Training School, Hakimpet. *Ab-initio* navigation training, advanced navigation training and air signallers training is carried out at the Navigation and Signals School, Hyderabad. Ground duties (non-technical) officers and Air Traffic Control officers are also trained at the Air Force Academy, Hyderabad. Flying instructors are trained at the Flying Instructors School, Tambaram. The College of Air Warfare, Secunderabad, conducts higher joint services and air warfare studies.

The Air Force Administrative College, Coimbatore, runs advanced courses for ground duties (non-technical) officers and the junior Commander Course for all branches. Technical officers are trained at the Air Force Technical College, Jalahalli. Some of the airmen of warrant rank are selected for Branch Commission. Such airmen of technical trades are trained at Air Force Technical College and other of non-technical trades at the Air Force Administrative College, Coimbatore.

Institutes at Jalahalli train airmen on radar, radio, electrical instruments, photo, driving and police duties. Another school at Tambaram trains airmen in mechanical trades such as airframes, engines, armament and safety equipment, meteorology and airfield safety. Motor mechanics are trained at a ground training school at Avadi. Ground Training Institutes at Vadodara and Barrackpur prepare personnel for maintenance and operation, surface-to-air missiles and associated equipment. Paratroops for air-borne units of the Army are trained at the Paratroopers Training School, Agra.

Medical and aircrew officers receive specialised training at the Institute of Aviation Medicine, Bangalore.

SUPPLIES, PRODUCTION AND RESEARCH

A substantial part of the defence stores needed by the services is now being developed and produced in the country. The responsibility for this has been entrusted to two separate Departments—Defence Production and Defence Supplies in the Ministry of Defence. The Department of Defence Production organises, directs and co-ordinates production of material and equipment required by the armed forces. It carries out its responsibility through the Directorate of Technical Development and Production, Ordnance Factories, Inspection, Standardisation, Defence Research and Development Organisation (DRDO) and nine public sector undertakings.

Ordnance Factories

Ordnance factories are amongst the oldest integrated industrial establishments, widely dispersed geographically all over the country. There are 34 ordnance factories, whose main thrust is aimed at meeting the twin objectives of modernisation of equipment and achieving maximum degree of self-reliance and self-sufficiency. These factories produce a wide variety of items covering broad spectrum of technology for the defence services, paramilitary forces and civil police. The range of production covers sophisticated anti-tank and anti-aircraft guns and other various type of guns, small arms and related ammunition, pyro-technical stores, transport vehicles, armoured vehicles, optical and fire control instruments, bridges, assault boats and various general and non-lethal stores and software items.

Production in ordnance factories has registered a steady growth over the past few years. Gross value of production increased from Rs 787 crore in 1981-82 to Rs 869 crore in 1982-83 registering a growth rate of 10.56 per cent. It is estimated that the value of production during 1983-84 will further go Rs 950 crore. Apart from the significant increase in terms of value, a number of new items have been taken up for bulk production for the first time after these were full developed and established.

Consistent with the needs of the defence services to continuously modernise their equipment in order to keep abreast of the rapidly changing military technology, old and out-dated plant and machinery in ordnance factories are being replaced with new and modern equipment in a planned manner. In 1983-84, it has been decided to replace complete production lines relating to brass melting and strip making in two ordnance factories and shell forge in two ordnance factories.

Defence Undertakings in Public Sector

There are nine public sector units under the Department of Defence Production. These are : Hindustan Aeronautics Ltd. (HAL); Bharat Electronics Ltd. (BEL); Bharat Earth Movers Ltd. (BEML); Mazagon Dock Ltd. (MDL); Garden Reach Shipbuilders & Engineers (GRSE); Goa Shipyard Ltd. (GSL); Praga Tools Ltd. (PTL); Bharat Dynamics Ltd. (BDL) and Mishra Dhatu Nigam Ltd. (MIDHANI).

These have a work force of over a lakh and capacity for design development and production of a wide variety of equipment and components to meet the requirements of defence services, besides catering to the needs of the civil sector.

The total capital investment including long term loans went up from Rs 610.3 crore during 1982-83 to Rs 710.5 crore during 1983-84. The value of production increased from Rs 1,144.1 crore in 1982-83 to Rs 1.414.40 crore in 1983-84. Similarly, the aggregate turnover increased from Rs 930.5 crore in 1982-83 to Rs 1,179.78 crore in 1983-84. The overall profit went up from Rs 72.05 crore in 1982-83 to Rs 87.42 crore in 1983-84.

The Hindustan Aeronautics Ltd. (HAL), set up in 1964, has 12 factories in six states : five at Bangalore and one each at Koraput, Nashik, Korwa, Kanpur, Lucknow, Barrackpur and Hyderabad. The principal business of the company is to design, manufacture, repair and overhaul various types of aircraft, helicopters and related aero-engines, avionics, instruments and accessories. HAL is currently manufacturing the jet trainer, Kiran, the trainer HPT-32, seven seater multipurpose Chetak Helicopter and light-weight helicopter for AOP role, Cheetah. The Company is manufacturing under licence Jaguar aircraft, its engines and related accessories and avionics. It has been manufacturing MiG-21 BIS under licence and has now been entrusted with the licence manufacture of MiG-27M aircraft, its engine and related equipment. The company has also been recently entrusted with the task of manufacturing light transport aircraft to meet the requirements of civil and defence users. Indigenisation activities are being actively pursued in order to progressively reduce the import contents of various aircraft being produced at HAL. The company has indigenised more than 3,200 items so far.

Bharat Electronics Ltd. (BEL) was established in 1954, with a single unit at Jalahali, Bangalore, to develop the indigenous electronics industry. In 29 momentous years, it has grown into a leader in professional electronics. It has three units at Bangalore, Ghaziabad and Pune. In addition, three more units are being established at Taloja (Maharashtra), Panchkula (Haryana) and Kotdwara (Uttar Pradesh) to augment the existing capacity to meet the growing demand for the electronic equipment and components in the country. Andhra Scientific Company Ltd., Machilipatnam has also been vested in BEL, after nationalisation.

The items manufactured by the company include low and high power communication equipment in the HF, UHF, VHF and Microwave Ranges, high-power static and mobile radars, static and mobile troposcatter with line of sight equipment, broadcast transmitters, gun control equipment, weapon control system for frigates, IFF equipment and electronic voting machines. The components manufactured by the undertaking include X-ray tubes, black and white TV picture tubes, image converter tubes, germanium and silicon semi-conductors, integrated circuits and magnesium manganese dioxide batteries.

Mazagon Dock Ltd., Bombay; Goa Shipyard Ltd., Goa and Garden Reach Shipbuilders and Engineers Ltd., Calcutta are leading ship building and ship repairing units in the defence public sector having facilities to build sophisticated warships like frigates, seaward defence boats, survey vessels, offshore and inshore patrol vessels. They also build merchant ships like cargo vessels, dredgers, tugs, floating cranes, barges and various types of passenger-cum-cargo vessels. MDL having successfully completed the series of six Leander class frigates, has delivered the first indigenously designed Godavari class frigate in December 1983. MDL which diversified in 1978 in import substitution area-fabrication of offshore platforms have now further diversified by undertaking fabrication of jack up rigs and offshore supply vessels as well as provision of support services, like transportation, installation and under-water inspection of offshore structures.

GRSE, Calcutta delivered the first bulk carrier *Lokpriti* for Moghul Line Ltd. in December 1981; the second one is nearing completion. It has already handed over two survey vessels *Sandhayak* and *Nirdeshak* to the Navy. In addition, they have delivered a number of seaward defence boats and fast patrol crafts to the Navy and Coast Guard.

GSL has also developed from mainly a ship repairing unit into a medium sized shipyard in the west coast building seaward defence boats, landing craft and survey craft for the Navy. Six exploratory fishing vessels have also been manufactured. GSL has also entered the offshore field by undertaking construction of offshore-support-cum-stand-by vessel.

BDL, Hyderabad, incorporated in 1970 for laying a technological and production base for the manufacture of guided missiles, commenced production with foreign collaboration in 1971. Since then the undertaking has achieved 73 per cent indigenisation in making the first generation anti-tank guided missile (ATGMs) and 82 per cent for its warhead. The delivery programme for the first generation ATGMs to the Army has been completed. The company is at present engaged in setting up of facilities for the manufacture of the second generation missile. It has also taken up the production of rockets and torpedoes for the Navy as well as a variety of items required for the various services.

BEML was incorporated on 11 May 1964, and commenced operations from 1 January 1965 with the transfer of the Railcoach Factory of their Hindustan Aircraft Ltd. It has two factories, one at Bangalore and the other at Kolar Gold Fields. BEML is now India's premier organisation in the production of high-technology earthmoving equipment like bulldozers, dumpers, loaders, scrapers, motor graders, cranes and sophisticated sub-assemblies like planetary axles, power shift transmissions and control valves. It also manufactures broad gauge integral coaches which meet about 30 per cent of the needs of the Indian railways.

Praga Tools turns out a wide range of machine tools, ranging from cutters and tool grinders, milling machines, thread rolling machines and GF copying lathes to lathe chucks and drill chucks and forgings and castings for the civil industry. The company has also been supplying screw couplings to the railways.

MIDHANI, Hyderabad was incorporated in 1973 to set up indigenous capabilities for the manufacture of a wide range of sophisticated and strategic special metals and super alloys, in various shapes and sizes as required by several vital industrial sectors, such as nuclear energy, power generation, aeronautics, space, electronics, chemicals, engineering and instrument industries. Integrated commercial production was started from July 1983.

Research and Development

The Defence Research and Development Organisation (DRDO) was established in 1958 by amalgamating some of the then existing technical development establishments with the Defence Science Organisation. The principal responsibilities of DRDO relate to the design and development of new and sophisticated weapons and equipment, based on the operational requirements projected by the services and to provide help in their indigenous production. DRDO has a network of 41 well equipped laboratories|establishments and 25 other liaison cells|resident technical offices|computer centres. The research and development activities of DRDO cover a wide span of disciplines ranging from armaments, explosives and propellants, rockets and missiles, electronics, aeronautics, naval science and technology, structural and civil engineering, combat vehicles, materials to agricultural and bio-medical sciences.

The DRDO and its laboratories are administered by the Department of Defence Reseach and Development. The Department under the Scientific Adviser to *Raksha Mantri* (Minister for Defence) and Secretary, Defence Research and Development is also responsible for rendering advice to *Raksha Mantri,* the three services and inter-services organisations on military operations, equipment and logistic and for information of research, design and development plans on various disciplines of importance to defence.

A major achievement of DRDO during 1983 has been the successful completion of the first prototype of main battle tank (MBT) which would be a modern contemporary tank using the state of art technology. Several weapon systems designed and developed by DRDO have already been accepted by services and several major weapons are in advanced stages of development.

The major programmes which have been launched during 1983 are development of light combat aircraft incorporating advanced technologies and an integrated guided missiles development programme to meet the futuristic missile requirements for the services. National resources would be pooled for these programmes.

TERRITORIAL ARMY

The Territorial Army is a citizens' volunteer force, which functions on part-time basis. It was established in 1949 and is designed to give the citizens an opportunity to receive military training in their spare time. The territorials serve the country in times of emergency by relieving the army of static duties, by aiding the civil power in dealing with natural calamities, by maintaining essential services in critical situations which threaten the life of the community or security of the country and by providing units for the regular army, if and when required. It is composed of infantry units and certain technical units such as railway engineers, general hospitals, etc. Oil battalions have been added to this force recently, to ensure adequate supply of oil in critical situations. In 1983, ecological units have been raised as a part of Territorial Army to restore the ecological balance in certain regions of the country, which is a unique experiment in this field with tremendous significance and potentialities. Territorial Army Units are, however, not required to perform military service outside India, save under a general or special order of the Government.

All able-bodied nationals of India in the age group of 18—35 (with relaxation in the upper age limit for entry into certain technical units) and possessing the requisite qualifications are eligible to join the Territorial Army as officers or other ranks.

NATIONAL CADET CORPS

The National Cadet Corps (NCC), established in 1948, is the premier youth organisation in the country, entry to which is open to students of universities, colleges and schools on a voluntary basis. It has a strength of over 11 lakh cadets (both boys and girls), studying in nearly 10,000 educational institutions. It aims at development of qualities such as leadership, character, comradeship, spirit of sportsmanship and the ideal of service among the youth and creation of a force of disciplined and trained citizens, who, in a national emergency could be of assistance and act as second line of defence of the country. The cadets and NCC Commissioned officers, however, have no liability for active military service.

The training programme of the cadets has a defence bias. Notwithstanding this, adventure oriented activities such as mountaineering and trekking expeditions, cycle expeditions, sailing, para-training, gliding, powered flying, para sailing, etc., and social service receive emphasis in their training. Microlight-flying is the latest adventure activity to be introduced in the NCC activities in the near future. For the past few years a youth exchange programme with Canada is being implemented. NCC cadets also get an opportunity for attending camps in Singapore and United Kingdom. They are also sent on foregin cruises on board Indian naval ships as part of attachment training. In order to foster closer integration amongst people of different states, a new national integration programme has been initiated in 1983. The aim of this programme is to improve understanding between young cadets (boys and girls) of various states within the country through closer contacts. The programme envisages cadets living in the homes of cadets of other states and working together on development projects.

NCC consists of three divisions, i.e. Senior Division for college boys, Junior Division for school boys and Girls Division for school and college going girls. The present authorised strength of the corps in Senior Division is 4.2 lakh cadets (Army 3,33,800; Navy 12,600; Air Force 11,600 and Girls 62,000). The Junior Division has an authorised strength of seven lakh cadets (Army 5,31,900; Navy 49,100; Air Force 52,000 and girls 67,000).

At the Centre, the Directorate General NCC headed by an officer of the rank of Lieutenant General is responsible for functioning of the NCC in the country. At the state level the country has been divided into 16 directorates, which cover all the states|union territories. A directorate is headed by an officer of the rank of Brigadier|equivalent from the other services.

WELFARE OF EX-SERVICEMEN

The Directorate General Resettlement looks after the resettlement of ex-servicemen in Government and private services, vocational and technical trades, land colonies and transport services. The Government has reserved 10 per cent of Group C posts and 20 per cent of Group D posts for ex-servicemen in all its ministries and departments. The corresponding percentages in central public sector undertakings as well as public sector banks in these categories are 14½ and 24½ respectively. In addition, 10 per cent of posts of Assistant Commandants in central para military forces have been reserved for ex-servicemen. Most of the state governments have provided reservation of posts for ex-servicemen varying from 2 to 20 per cent. Ex-servicemen are allowed relaxation in upper age limits and educational qualifications for employment against reserved vacancies.

To afford additional employment opportunities to ex-servicemen, some special schemes have been recently evolved. One such scheme is the raising of peace-keeping forces in states to deal with insurgencies and other law and order problems. Bihar has raised one armed police battalion consisting exclusively of ex-servicemen as a peace-keeping force in the state. Assam is in the process of raising four battalions of Assam Special Peace Keeping Force each with a component of about 25 per cent ex-servicemen. Orissa has also decided to raise one such armed police battalion consisting solely of ex-servicemen.

Ecological task forces provide new vistas for re-settlement of ex-servicemen nearer homes. They have the additional advantage of utilising ex-servicemen in the nation-building task of restoration of ecological balance. One ecological task force is operating in the hilly areas of Uttar Pradesh and another one along the Rajasthan canal. Three more ecological units are likely to be raised for Himachal Pradesh, Jammu and Kashmir and Maharashtra in the near future.

The Defence Security Corps affords an important avenue for resettlement of ex-servicemen. During 1983, a very large number of ex-servicemen were absorbed in DSC in the wake of substantial improvements in terms and conditions of service of DSC personnel and a special recruitment drive launched by the Directorate General Resettlement.

Government orders have also been issued that, while fixing the pay of ex-servicemen on re-employment, full military pension will be exempted in case of personnel below the commissioned rank. In case of officers, the exemptable limit has been enhanced from Rs 125 to Rs 250 per month.

To encourage ex-servicemen to get resettled in various self employment ventures, several schemes are being implemented in stages. These include reservation of industrial plots in industrial complexes developed by some state governments, reservation of 10 per cent of national permits given to states for public carriers, formation of ex-servicemen transport companies for transportation of coal, payment of 10 per cent subsidy on all items manufactured by ex-servicemen and supplied to the Ministry of Defence, inter-service organisations and Directorate General Supplies and Disposal. The DGR also helps ex-servicmen in procuring new vehicles, tractors, three-wheeler scooters, surplus army vehicles and repairable duplicators and typewriters. About 330 ex-servicemen families having farming background have been settled in the Great Nicobar Islands, further induction of ex-servicemen in the islands is under review.

An on the job training scheme was launched in March 1981. Under this programme, selected retired personnel are being imparted nine months intensive training in ten trades in public sector undertakings. These include training in industrial and agricultural skills, animal husbandry, teaching and social work.

A new scheme known as PEXSEM (preparing ex-servicemen for self-employment) was conceived in early 1983 and launched on 1 September 1983, on a pilot basis in six districts—one each in Punjab, Haryana, Rajasthan, Himachal Pradesh, Uttar Pradesh and Tamil Nadu. Under this scheme, ex-servicemen are provided necessary training|guidance and other assistance to set up their self-employment ventures in rural areas.

To enable more and more ex-servicemen to get placed in civil jobs, training schemes for building up their skills and expertise have been intensified. Training programmes are organised free of cost for JCOs|OR and their equivalents from the other services under the aegis of various industrial training institutes, public sector undertakings, nationalised banks and commercial organisations of repute all over the country. For retiring personnel, special short duration courses in different disciplines such as security, management, industrial law, labour law and hotel management are also organised in major towns and cities all over the country.

An important organisation which assists ex-servicemen and their families in close liaison with the local administration is the sainik boards organisation with its headquarters in New Delhi. This organisation coordinates the activities of state level boards called Rajya Sainik Boards which in turn control the district level boards known as zila sainik boards. A number of welfare funds like the Special Fund for Reconstruction and Rehabilitation of Ex-servicemen, Armed Forces Flag Day Fund, Armed Forces Benevolent Fund, War Bereaved and Disabled Ex-servicemen Special Relief Fund, etc., held by this organisation are used for the welfare and rehabilitation of ex-servicemen. Interest subsidy, is paid on loans taken from banks upto a certain limit for some self-employment schemes, started by ex-servicemen.

REHABILITATION OF WAR VICTIMS

Following the Indo-Pak War in December 1971, both the Central and state governments formulated a number of schemes to extend benefits and facilities to the war-bereaved families particularly the widows, the disabled and their dependents. A special organisation in the Ministry of Defence has been created to co-ordinate action on the various schemes. Among the important central schemes is the one which allows liberal pension concessions for the widows and families of officers and men killed in action and for those disabled. The scheme which came into operation on 1 February 1972, covers all those affected in military operations since the Pakistani aggression in Jammu and Kashmir in 1947. This apart, the Central Government meets the full cost of education up to the first degree of the dependents of all personnel of the defence and para-military forces killed or permanently disabled. It also bears the full cost of such dependents as have already taken up post-graduate courses.

Other schemes which are in addition to existing concessions, relate to priority in obtaining employment under the Central Government and public sector undertakings. Disabled servicemen are entitled to Priority I besides concessions in age, educational qualifications and medical standards.

Upto two dependents of service personnel killed|severely disabled whether in action or in peace provided the disability is attributable to military service are entitled to Priority II-A for purposes of employment in Group C and Group D posts of the Central Government and its constituent public sector undertakings. The Rajya|Zila Sainik Boards have also been vested with powers to sponsor ex-servicemen including the disabled against vacancies reserved for them. At the same time, the employment exchanges continue to render them employment assistance in respect of unreserved vacancies.

State schemes include cash grants, ex-gratia allotment of land for agricultural purposes and residential plots on concessional rates.

CANTONMENT BOARDS

Cantonments were established under the Cantonments Act, 1924 to safeguard the health, welfare and security of the armed forces personnel, who had to reside in them. The Act also provides for municipal administration for the civilian population in cantonment and allows representation from the civilian population in cantonment administration. A board is constituted in each cantonment comprising elected, nominated and ex-officio members who function under the administrative and financial control of the GOC-in-C of the Command.

Cantonments are classified as Class I, II and III, depending on the civil population in each case. Of the 62 cantonments, 30 are Class I, 19 are Class II and 13 are Class III. With the prior approval of the Central Government, Cantonment Boards are empowered to impose such taxes within their area as are being levied by the neighbouring municipality. However, the revenue so realised is, in most cases, not enough to enable the Boards to balance their budgets, they have to be assisted by grants-in aid from the Central Government.

The Cantonments Act, 1924 was amended in 1983. The amended Act among other things empowers the Central Government to review any decision of the Cantonment Board or order of the GOC-in-C in matters pertaining to the Board's administration. The Central Government could also issue directions to the Board to impose a new tax or to enhance rates of existing taxes, in order to improve the financial position of the Board. Provision has been made for declaration of Naval stations as cantonments, where necessary.

5

EDUCATION

Before 1976, education was exclusively a responsibility of the states the Central Government being concerned with certain areas like co ordination, determination of standards in technical and higher edu- cation, etc. In 1976, by a Constitutional amendment, educatio became the joint responsibility of the Central and state governments However, the primary responsibility continues to be that of the states Apart from this, the Government administers the central universities institutions of national importance, and other scientific and technica institutions. It has also the responsibility for promotion of educatio of the weaker sections particularly scheduled castes and schedule tribes.

NATIONAL POLICY

The national policy on education, 1968 has been accepted by th Government as a framework at the national level for all educationa development in the country supplemented by the guidelines adopte in the Sixth Plan document.

The programmes spelt out in the national policy on education ar being implemented by the Central and the state governments with suc modifications and adjustments as are warranted from time to time b the socio-economic conditions in the country. Most significant o these programmes are universalisation of elementary education an eradication of adult illiteracy. Both these form part of Centre's minimum needs programme as well as the Revised 20-Point Programme.

For the discharge of its specific responsibility, the Ministry o Education has been acting directly by itself and through its institutions like the University Grants Commission, National Council of Educational Research and Training, etc. The aims and objectives of these institutions have been, by and large, to bring about improvement o standards of education and training at various levels or to promot specific areas of education like languages, production of books, etc.

EDUCATIONAL PLANNING

Besides policy formulation, Ministry of Education shares with th state governments responsibility for educational planning. In all th previous five year plans, education was taken to be a social service rather than input in the development process. There was a change in emphasis beginning with the Sixth Plan, wherein it has been considered to be pivotal in social and economic development of the country through development of human resources. Priority has been given to the programmes of universalisation of elementary education and eradication of adult illiteracy in the age-group 15–35. Both these programmes are covered under the Revised 20-Point Programme. Emphasis has been laid for education of the weaker sections of society including girls, scheduled castes and scheduled tribes. Priority has been given to qualitative improvement of education specially the technical and higher education, vocationalisation of secondary education, development of regional languages, strengthening of monitoring and evaluation machinery for effective implementation of Plan Programmes, etc. Emphasis has also been laid on establishing dynamic and beneficial linkages between education, health, social welfare and employment programmes.

The Planning Commission approved an outlay of Rs 2,524 crore for education for the Sixth Plan. This forms 2.6 per cent of the total Plan outlay. Taking together the expenditure of Rs 340 crore in 1982-83, anticipated expenditure of Rs 759 crore in 1983-84 and outlay of Rs 831 crore in 1984-85, the likely utilisation of plan funds during the entire Sixth Plan period will be Rs 2.901 crore. This is about 115 per cent of the total Sixth Plan outlay on education.

According to the available budget estimates for 1983-84 the total budgetted expenditure of the Central and state governments on education work out to Rs 6,176 crore which forms 9.6 per cent of the total budget. The detailed achievements and targets on education have been given in table 5.1.

Literacy

In 1951, 16.6 per cent of the people in India could read and write. The percentage went up to 29.45 per cent in 1971 and 36.23 in 1981 (excluding Assam). According to 1981 census Kerala has the highest literacy rate of 69.17 per cent followed by Maharashtra and Tamil Nadu with 47.37 per cent and 45.78 per cent, respectively. Chandigarh leads the union territories with a percentage of 64.68. Despite the rise in the literacy rate and the total number of literates, the number of illiterates has increased (excluding Assam) from 37.23 crore in 1971 to 42.43 crore in 1981, due to growth in population.

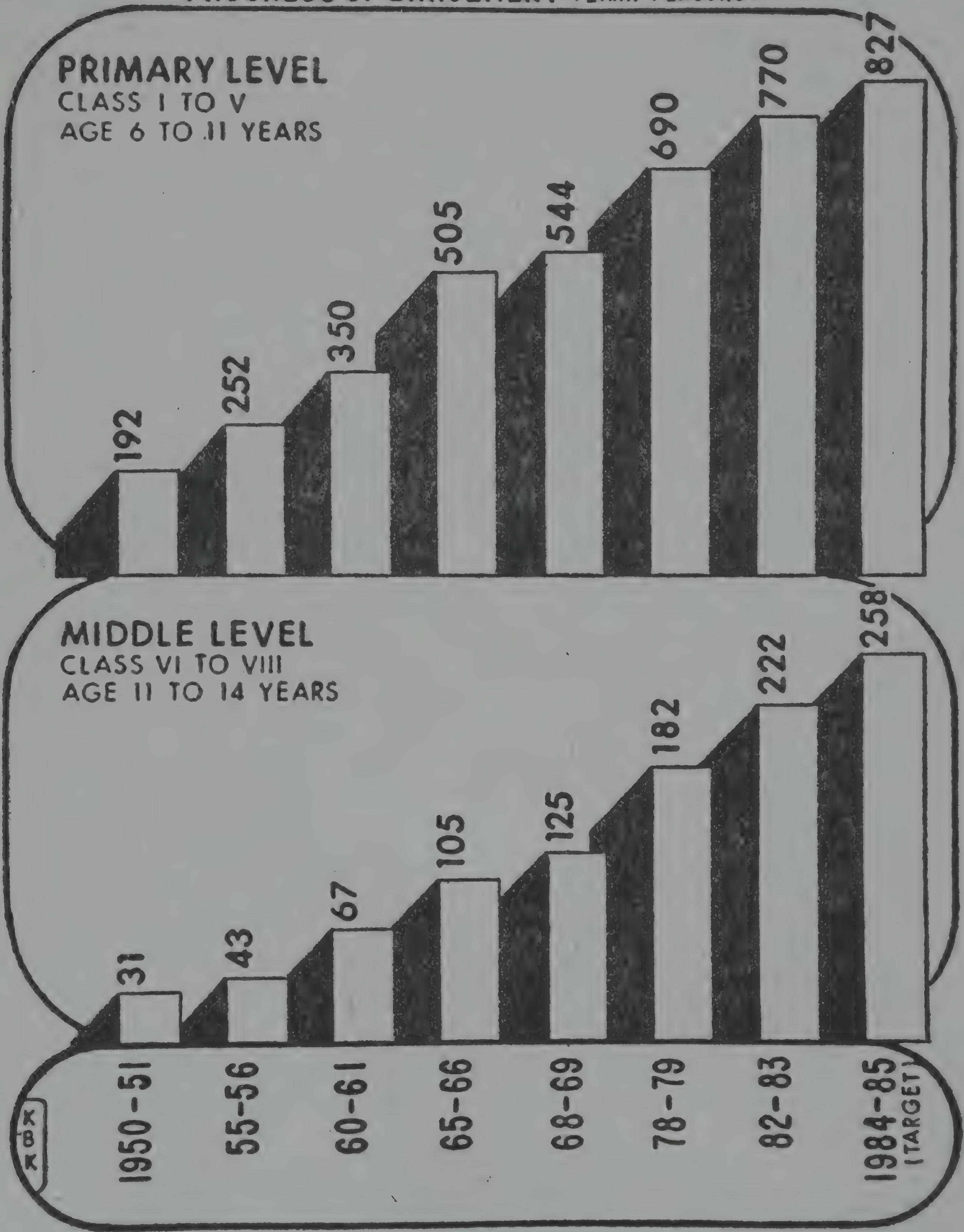
Kerala with 64.48 per cent female literacy leads all other states followed by Maharashtra and Punjab with 35.08 per cent and 34.14 per cent respectively. Among the union territories Chandigarh with 59.30 per cent female literacy occupies the first position.

ELEMENTARY EDUCATION

The highest priority has been given to the programme of universalisation of elementary education for fulfilment of the Constitutional directive of providing universal, free and compulsory education to all children upto the age of 14. Sixth Plan enrolment targets and yearwise achievements are given in table 5.2.

Education in classes I to V is free in Government schools and schools run by local bodies in all parts of the country. It is also free in classes VI to VIII in all states except for boys in Uttar Pradesh.

Compulsory Education Acts are available in 15 states and 4 union territories **viz.,** Andhra Pradesh, Assam, Gujarat, Haryana, Himachal Pradesh, Maharashtra, Punjab, Rajasthan, Tamil Nadu, Uttar



ELEMENTARY EDUCATION IN INDIA

PROGRESS OF ENROLMENT (LAKH PERSONS)

TABLE 5.1

ACHIEVEMENTS AT DIFFERENT LEVELS OF EDUCATION

	1950-51	1955-56	1960-61	1965-66	1968-69	1978-79	1982-83
Number of pupils in classes I—V (lakh)	191.5	251·7	349·9	504.7	543·7	689·6	770·4
Percentage thereof to total population in age group 6—11	42·6	52·8	62·4	76·7	78·1	81·6	87·2
Number of pupils in classes VI—VIII (lakh)	31.2	42.9	67.0	105·3	125·4	181·8	222. 1
Percentage thereof to total population in age group 11—14	12·7	16·5	22·5	30·8	33·5	38·0	43·9
Number of pupils in classes IX—XI/XII(lakh)	12·2	18·8	28·9	50·4	61·5	84·1	118·2
Percentage thereof to total population in age group 14—17	5·3	7·4	10·6	16·2	18·3	18·8	24·6
Number of pupils at the university stage arts, science and commerce (lakh)	3·6	6·3	8·9	14·9	17·0	38·2	47·5
Percentage thereof to total population in age group 17—23	0·8	1·4	1·8	2·7	3·3	4·9	NA
Percentage of students reading science at university stage	37·8	33·0	28·9	29·5			
Number of primary/senior basic schools	2,09,671	2,78,135	3.30,399	3,91,064	4,00,621	4,72,519	50,374
Number of middle/senior basic schools	13,596	21,730	49,663	75,798	84,246	1,12,801	1,23,423
Number of high/higher secondary schools	7,288	10,838	17,257	27,477	33,487	6,874	52,279
Number of teachers training schools	782	930	1,138	601	231	118	1,419
Number of teachers training colleges	53	107	478	1,272	1,377	962	
Number of arts, science (including research) and commerce colleges	542	772	1,122	1,788	2,141	8,698	8,011
Number of Universities	727	32	45	64	92	125[1]	137[1]
Number of teachers in primary schools.	5,37,918	6,91,249	7,41,515	9,44,377	10,05,282	12,96,639	13,89,356
Percentage of trained teachers in primary schools	58·8	61·2	64·1	70·5	76·9	87·1	86·9
Number of teachers in middle schools	85,496	1,48,394	3,45,228	5,27,754	5,95,733	8,25,146	8,56,389
Percentage of trained teachers in middle schools	53·3	58·5	66·5	76·9	81·0	87·4	89·5
Number of teachers in high/higher secondary schools	1,26,504	1,89,794	2,96,305	4,79,060	5,81,618	8,18,507	9,93,115
Number of teachers in university, arts and science colleges	18,648	27,883	41,759	66,882	91,069	2,49,399	NA

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1. Includes deemed to be university and institutions of national importance.
2. NA stands for not available.

TABLE 5·2 ENROLMENT TARGETS AND ACHIEVEMENTS DURING SIXTH PLAN

(in lakh)

Age Group	Sixth Plan Target (1984-85)	1980-81 Achievements	1981-82 Achievements	1982-83 Achievements
6-11 (Classes I—V)				
Boys . . .	485	445·8	449·8	472·8
Girls . . .	342	281·1	285·8	297·6
Total	827 (95·2)	726·9 (83·1)	735·6 (83·7)	770·4 (87·2)
11—14 (Classes VI-VIII)				
Boys	166	132·8	139·7	146·9
Girls	92	65·7	70·8	75·2
Total	258 (50·3)	198·5 (40·0)	210·5 (41·9)	222·1 (43·9)

(Figures in brackets indicate as percentage of the population of the relevant age group.)

Pradesh, West Bengal, Andaman and Nicobar Inlands, Chandigarh, Delhi and Pondicherry.

An important component of the strategy for universalisation is to cover as much as possible of the total non-enrolled and drop out children by non-formal part-time education. An outlay of Rs 25 crore has been provided as grants-in-aid for nine educationally backward states in the Sixth Plan for non-formal education.

Work on the formulation of the Seventh Plan on education has been taken up. According to the approach paper the over-riding priority in the education sector will be on universal elementary education for children in the age group 6–14 by 1990. Both full and part time system of formal and non-formal methods will be adopted with emphasis shifting from more enrolment to retention of children after enrolment and to ensuring that the children achieve the basic learning objectives.

SECONDARY EDUCATION

Education is free upto lower secondary (upto class X) stage in 11 states and 7 union territories, namely, Andhra Pradesh, Assam, Bihar, Gujarat, Jammu and Kashmir, Karnataka, Kerala, Nagaland, Tamil Nadu, Tripura, West Bengal, Arunachal Pradesh, Andaman and Nicobar Islands, Dadra and Nagar Haveli, Goa, Daman and Diu, Lakshadweep, Mizoram and Pondicherry. It is free for girls in Madhya Pradesh, Manipur, Orissa, Rajasthan, Sikkim and Uttar Pradesh. In Chandigarh, lower secondary education is free in rural areas. Children belonging to scheduled castes and scheduled tribes get free education in all states and union territories upto class X.

Education at the higher secondary stage (class XI-XII) is free in Gujarat, Jammu and Kashmir, Nagaland, Tamil Nadu, Tripura, West Bengal and in the union territories of Arunachal Pradesh, Andaman and Nicobar Islands, Dadra and Nagar Haveli, Lakshadweep and Pondicherry. Besides, education at this stage is also free for girls in Andhra Pradesh, Madhya Pradesh, Manipur and Sikkim.

0+2+3 attern

The adoption of the 10+2+3 pattern was first recommended by the Calcutta University Commission (1917-19). The proposal was also endorsed by the Central Advisory Board of Education. Apart from a uniform structure, the pattern provides for changing the content of education to suit national needs. It transfers the intermediate stage from the university to the school where it really belongs. The system makes vocationalisation of the higher secondary stage easier and more effective. It raises the admission age to the university to a desirable level. Above all the system helps in raising standards both at the school and the university stage.

Ten plus two plus three pattern has now been adopted by 26 states and union territories and also by the schools affiliated to the Central Board of Secondary Education.

UNIVERSITY AND HIGHER EDUCATION

Higher education is imparted through 123 universities and a number of arts, science, commerce and professional colleges affiliated to them. Besides, there were 15 institutes in several specialised fields which are deemed to be universities under the University Grants Commission Act, 1956 as on 1 February 1984. Nine institutions has been declared by Parliament to be institutes of national importance.

University Grants Commission

The University Grants Commission, set up initially in 1953, promotes and co-ordinates university education and determines and maintains standards of teaching, examination and research in the universities. It has the authority to enquire into the financial needs of the universities and to make appropriate grants to different universities. It advises on the establishment of new universities and other matters pertaining to higher education.

National Professorship

The Government instituted in 1949 National Professorship to honour distinguished academics and scholars in recognition of their valuable contribution to knowledge. Persons of real eminence who have attained the age of 65 and who have made outstanding contributions in their respective fields and are still capable of further productive research are considered for appointment as national research professors. The appointment is made initially for a period of 5 years which is extendable by another five years.

National Professors (the disciplines and the years of appointment are given in the brackets) appointed since the inception of the scheme are as follows : Dr. Chandrasekhar Venkat Raman (1888-1970) (Physics-1949), Dr. Satyendra Nath Bose (1894-1974) (Physics-1958), Dr. Radha Binod Pal (1886-1967) (Jurisprudence-1959), Dr. Pandurang Vaman Kane (1880-1971) (Indology-1959), Dr. Sisir Kumar Mitra (1890-1963) (Physics-1962), Dr. Darashaw Nosherwan Wadia (1883-1969) (Geology-1962), Dr. Vasant Ranji Khanolkar (1895-1978) (Medicine-1963), Dr. Suniti Kumar Chatterjee (1890-1977) (Humanities-1965), Dr. Shiyali Ramamrita Ranganathan (1892-1972) (Library Science-1965), Dr. Salim Moizuddin Abdul Ali (b-1896) (Ornithology-1982), Dr. Telliyavaram Mahadevan Ponnambalam Mahadevan (b-1911) (Philosophy-1982), Dr. Vijayendra Kasturi Ranga Vardaraja Rao (b-1908) (Economics-1984).

TECHNICAL EDUCATION

Trained manpower at middle-level is needed for a wide range of professional duties, for application of knowledge in field operation, in production and construction testing and development, etc. For this purpose, diploma courses are offered in about 400 polytechnics, with an annual enrolment capacity of about 65,000 students. They offer a variety of specialisations in engineering and technology as well as in a few non-technological fields. The courses are normally of 3 years duration where fulltime institutional instruction is offered and 3½ to 4 years where instruction is on a "sandwich" pattern or on part-time basis. In addition to these polytechnics, there are 47 more polytechnics which are meant exclusively for girls. They are admitting about 6,000 girls per year.

The polytechnics are widely spread over all the states and union territories. They are affiliated to the respective State Boards of Technical Education which lay down in general the levels and standards of the courses and guide the system of evaluation of the students appearing at the examination. The vocational training|craftsmen courses are offered at the industrial training institutes.

For the professional engineers and technologists, 160 engineering colleges offer courses leading to Bachelor's degree in engineering and technology of the respective university. The total admission capacity annually for these courses is about 30,000.

The number of institutions offering post-graduate courses is 96 with annual intake capacity of about 6,000. Facilities also exist at these centres, for part-time courses at the post-graduate level for those who are already in service. The duration of a full-time Post-Graduate Course in engineering and technology is three semesters.

Five national institutions at Bombay, Kanpur, Kharagpur, Madras and New Delhi, known as Indian Institute of Technology, provide facilities for higher level education and research in engineering and technology. These institutions admit about 1,200 students annually to under-graduate courses. Besides, these institutions along with the Indian Institute of Science, Bangalore, admit nearly 2,000 student every year to the post-graduate courses and 1,500 research scholars. There are 15 regional engineering colleges providing facilities for education in various branches of engineering and technology. For specialised courses such as mining and metallurgy, industrial engineering, forge and foundry and architecture, a number of centres have been established. To integrate engineering education with practical training, a number of engineering colleges and polytechnics are now offering 'sandwich' courses in collaboration with industry. The duration of such courses for degree in engineering is 4½-5½ years and for diploma 3½-4 years. To train teachers needed for polytechnics, there are four technical teachers training institutions located at Calcutta, Bhopal, Chandigarh and Madras.

Institutions numbering about 30, mostly in the university sector, are offering management courses both at the first degree and advanced levels. The courses offered at various institutions cover training at the Master's degree level for the management and business administration.

India is now in a position to meet the technical manpower requirements during the next decade with the level of facilities already created.

ADULT EDUCATION

The process of all-round national development in India has changed the concept of adult education significantly. It is no longer confined to traditional literacy in three R's alone. The changing socio-economic scene in the country demands overall development of the human resources. While determined efforts are being made to universalise elementary education up to the age of 14, educational facilities are being extended to adult population to remedy their educational deprivation and to develop their potentiality. Thus, the Government has resolved to remove illiteracy to enable the masses to play an active-role in social and cultural change.

Non-formal education for children in the age-group 9-14, who may have had 20 opportunity of going to school or who may have dropped out of school; and for adults, particularly in the productive age group 15-35 has been given priority during the Sixth Plan in view of its potential for immediate impact in raising the level of productivity in the economy. Weaker sections and districts with literacy rate below the national average are being given special attention.

Potential of electronic media for telecasting|broadcasting especially in context of INSAT would be utilized.

A high power National Board of Adult Education has been constituted to apprise the Government for formulation of policy on all aspects of adult education programmes and co-ordination in their implementation. Besides providing basic literacy skills, the programme aims at upgrading the functional skills and creating social awareness among the illiterate masses.

VOMEN'S DUCATION

In recognition of the importance of education of girls and women in accelerating socio-economic development, the Government has formulated a variety of measures from time to time in this direction. As a result of these measures there had been gradual but progressive increase in the enrolment of girls over the plan periods and the gap in the education of boys and girls appeared to have been narrowing down during the last two decades. During the ten-year period ending 1980-81, there has been an annual growth of 2.8 per cent in enrolment in classes I to V and 6.3 per cent in classes VI to VIII for girls. In the context of the goal of achieving universalisation of elementary education by 1989-90, an additional enrolment of girls to the extent of 70 lakh at primary level and 26.50 lakh at middle level is proposed to be achieved by 1984-85, whereas the corresponding figures of boys enrolment are 47 lakh and 36.50 lakh respectively.

DUCATIONAL ECHNOLOGY

The Ministry of Education started an Educational Technology Programme in the Central Sector of the Fourth Plan in 1972. The programme aims at deploying the resources of education technology for bringing about a qualitative improvement in education, widening access to education and reducing existing disparities between different regions of the country as well as different sections of the population. Under this scheme educational technology cells have been set up in 21 states and a centre for educational technology in National Council of Educational Research and Technology.

In the context of the availability of the television facilities of INSAT the Ministry of Information and Broadcasting suggested that the user ministries should take an active part in the production of programmes meant for their specific uses. This would ensure that the programmes are relevant, meaningful and effective. It was thus necessary to create production capabilities at a decentralised level. The Ministry of Education decided that the responsibility for the production of educational television programmes would be gradually taken over by the educational authorities from Doordarshan.

In order to implement this decision it was necessary to set u programme production centres in the INSAT states in a phased manne Accordingly, State Institutes of Educational Technology (SIET) a being established in each of the 6 INSAT states namely Andh Pradesh, Orissa, Gujarat, Maharashtra, Uttar Pradesh and Bihar, fo promoting production of ETV (Educational Television) programme on a decentralised basis. The non-INSAT states and union territori are being prepared for participation in the INSAT programme throug an educational technology scheme under which limited productio capabilities are being created to enable the states and union territori to experiment in production of programmes and organise trainin courses. At the Central level a Central Institute of Educationa Technology (CIET) has been set up in National Council of Educational Research and Training by merging the existing Centre fo Educational Technology and Department of Teaching Aids.

The major priorities identified for educational programmes particularly in relation to the use of radio and television facilities fo educational purposes are (a) universalisation of elementary educatio both formal and non-formal; (b) non-formal education for adults linking education to economic and social tasks; (c) development o vocational and professional skills; (d) training for citizenship; (e popularising science with a view to developing a scientific outlook (f) promoting national integration; and (g) providing informatio about themes of national importance—population education, energy conservation, preservation of wild life, environmental sanitation nutrition and health.

Keeping in view the large requirements for teacher education, th mass media will be used to broaden the horizon of teachers; to provid help in formal-school teaching; and to assist in appreciation of th objectives of the educational uses of television and radio to ensur better utilisation.

The state production centres will be responsible for the productio of television programmes of acceptable professional quality an educational utility. To begin with the programmes would be limite to elementary education, non-formal education and teacher training Once the production centres become fully operational they will cate to the programme requirement of all levels of education.

Till such time as the state production centres become operationa the CIET is producing programmes which are being telecast in Andhr Pradesh, Orissa and Maharashtra. In Andhra Pradesh and Oriss the ETV service is telecast *via* INSAT while in Maharashtra the programmes are telecast through the terrestrial network. The INSAT ETV service in Maharashtra and the remaining three states *i.e.* Gujarat Uttar Pradesh, and Bihar is likely to commence from August 1984. The production of ETV programmes in the INSAT states is being shared between Doordarshan and CIET on 50 : 50 basis. There ar two programmes daily on five days a week for school children which are telecast during the normal working hours of the schools. Programmes are meant for the age group 5-8 and 9-11. On ever Saturday there is a programme for teachers. In view of the limite production facilities available, the CIET is presently producing programmes in Hindi or English and dubbing them in the regiona language of the state concerned.

The University Grants Commission attaches high importance to the use of educational technology for improving the standards of higher education and making it accessible to those who cannot benefit from the formal system. It is also proposed to utilise one hour transmission time available through INSAT-IB for higher education. For the production of appropriate programmes Audio Visual Research Centres and Educational Media Research Centres are being set up at Jamia Milia Islamia, New Delhi, universities of Poona, Ahmadabad, Osmania and Roorkee and the Central Institute of English and Foreign Languages, Hyderabad.

tional Council Educational earch and ining

The National Council of Educational Research and Training (NCERT), established in 1961, with headquarters in New Delhi, acts as the principal agency for academic advice to the Ministry of Education, in matters pertaining to the formulation and implementation of policies and programmes for the qualitative improvement of school education. It works in close collaboration with the education departments of the states, universities and other institutions having an interest in school education. It also maintains close contacts with international organisations. Besides the National Institute of Education, New Delhi, the Council has four regional colleges of education at Ajmer, Bhopal, Bhubaneswar and Mysore and a net work of eighteen field offices located in the various states and union territories for liaison with state education departments.

The Council is mainly engaged in research, development, training and extension and has provided support to the implementation of 10+2+3 pattern of education. Besides developing curricula for the various stages of school education, it produces textbooks in almost all the subjects for the entire school stage (classes I-XII). The states are free to adopt or adapt NCERT textbooks for their schools and supplementary reading material for enriching the knowledge of children. Its centre for Educational Technology and the Department of Teaching Aids produce video-tapes, tape-slides, films and other audio-visual material for use in schools. The Council produces low cost science kits for primary and middle schools. The Council is also implementing UNESCO and UNICEF assisted projects in the areas of elementary education, community education, nutrition education and population education.

NCERT conducts and sponsors research. It undertakes training programmes at national and international levels and offers consultative services on various aspects of school education. The four regional colleges of education undertake programmes related to innovative pre-service and in-service training of teachers.

The Council brings out four journals *viz. Indian Education Review* (quarterly), *Journal of Indian Education* (bi-monthly), *School Science* (quarterly) and *the Primary Teacher* (quarterly). *The Primary Teacher* is published both in Hindi and English.

Every year the Council awards 750 scholarships to students on the basis of a national talent search examination. The successful candidates are awarded scholarships to pursue studies up to Ph. D. level in science, mathematics and social sciences or professional courses in areas like engineering and medicine.

CIAL SEARCH GANI- TIONS

The Indian Council of Historical Research, New Delhi, set up in 1972, enunciates and implements a national policy of historical research and encourges scientific writing of history. It operates research projects, offers fellowships and undertakes publication and translation work.

The Indian Council of Social Science Research, New Delhi is a autonomous organisation set up to review the progress of socia science research, to give advice to its users in Government or outside to sponsor research programmes and give grants to institutions an individuals for research in the field of social sciences.

The Indian Institute of Advanced Study, Simla set up in 1965, i a centre for advanced research in the humanities, social sciences an natural sciences. It is a community of scholars engaged in explorin new frontiers of knowledge aimed at making major conceptual deve lopments and at offering inter-disciplinary perspectives on questions o contemporary relevance. A committee appointed by the Governmer recently reviewed the functioning of the Institute. Action has bee initiated for the reorganisation of the Institute on the lines recommend ed by the Committee.

The Indian Council of Philosophical Research with offices at Nev Delhi and Lucknow has been set up by the Government to promot studies and research in philosophical themes.

SCHOLARSHIPS

The Ministry of Education administers a number of scholarshi programmes including those offered by other countries providin facilities for higher and specialised education and training to India students. The Ministry also provides scholarships to nationals o other countries on a bilateral basis or otherwise.

The Government launched the national scholarships scheme i 1961-62 on merit-cum-means basis. This is being implemente through the state governments and union territory administrations. Fo 1984-85, the number of fresh scholarships is 27,000.

The national loan scholarships scheme is in operation sinc 1963-64. This is also implemented through the state governments an union territory administrations. The number of fresh scholarships i 20,000 per annum.

Scheme of scholarships in approved residential secondary schoo was started in 1953-54 and is being administered directly. Fiv hundred scholarships are awarded every year to students of the ag group 11-12 whose parental income does not exceed Rs 500 pe month.

Scheme of scholarships to students from non-Hindi speaking state for post-matric studies in Hindi, operative since 1955-56, is bein implemented through non-Hindi speaking states and union territorie Since 1979-80 every year 2,500 scholarships are given under th scheme.

The general cultural scholarships scheme introduced in 1949-50 being administered directly by the Government. One hundred an eighty scholarships are offered every year to the students of Asia African and other developing countries for higher education in India.

Scholarships at the secondary stage for talented children from rur areas are being administered through the state governments and unio territory administrations. The aim is to develop the potential talent fo rural areas and educate them in good neighbourhood/district school Under the scheme, scholarships begin at the middle stage and ceas at the end of the secondary stage including plus two stage of education Thirtythree thousand scholarships in this category have been allocate for 1984-85.

Scheme of scholarships for study aboard, operating since 1971-7 is being administered directly. Scholarships are available in all-field except medical and agricultural studies. Fifty scholarships are awarded every year.

About 300 scholarships|fellowships are offered to foreign students annually under the cultural exchange programmes and other schemes. During 1983-84, about 115 scholars joined different universities/institutes and were awarded the scholarships. Under these schemes, scholarships are awarded normally for a period of two years depending on the duration of the course. The scholarships are mainly for postgraduate studies|research.

OKS

India is among the first ten countries in total book production. In the production of books in English, India ranks third after USA and UK.

tional
ok Trust

The National Book Trust (NBT), an autonomous organisation set up by the Ministry of Education in 1957, functions with the objectives of fostering book-mindedness among the people and producing good reading material for various age-groups at moderate prices.

In pursuance of its objectives, the Trust organises book fairs in India at national and regional levels and participates in international book fairs. During 1983-84, the Trust organised the Sixth World Book Fair in New Delhi from 4-14 February 1984 and the 11th National Book Fair in Chandigarh from 25 February to 7 March 1983. The first National Children's Book Fair was organised by the Trust in Calcutta from 14-22 November 1983. During the fair, a workshop for the illustrators of children's books was also organised. The Trust also participated in a number of book fairs and festivals held outside the country.

Under the scheme for publication of reading material for the rural areas, the Trust undertook its fourth project in Madhya Pradesh during 1983 in collaboration with the Rani Durgavati Vishwavidyalaya, Jabalpur. After surveying the rural areas of Patan, Jabalpur district, a rural workshop was organised. The Trust also prepared nine books for the neo-literates.

The Trust publishes books in Indian languages and English in well-conceived series. Some of the important series are : *India—the Land and the People, National Biography, Young India Library, Folklore of India, Popular Science and World of Today.* Besides these series, the Trust also operates two major publishing programmes which aim at promoting national integration, *viz., Aadan Pradan and Nehru Bal Pustakalaya.*

It also operates a scheme for subsidising the publication of university level books in English by Indian authors for making them available to the students at low prices.

A major activity of the Trust is organising seminars, symposia and training courses for writers, publishers, booksellers, etc.

blications
vision

The Publications Division of the Ministry of Information and Broadcasting brings out books, pamphlets, albums and journals to provide the common reader with information regarding diverse aspects of India's national life and culture and messages of national leaders. (For details, see Chapter on Mass Communication).

port of
oks

India, as a large producer of quality books, has an evergrowing potential for exporting books. During 1983-84, India exported books,

including periodicals and journals worth about Rs 20 crore.
publicising Indian books abroad, India participates in internati
book fairs and organises special exhibitions of Indian books
conducts market studies in foreign countries.

Import of Books

No import licence is required for importing educational, scien
and technical books as well as records for learning languages.

National Educational Resources Centre

The Raja Rommohun Roy National Educational Resources Ce
was set up in New Delhi in 1972 to serve as an information-cum-d
mentation centre. The Centre strives to promote Indian author
and indigenous production of university level books and to pro
documentation and statistical analysis of the printed materials impo
from abroad with a view to formulating a meaningful import p
for books. It has a large collection of university level books prod
indigenously as well as the subsidised editions of foreign text book

The Centre has been designated as the national agency for in
ducing the International Book Numbering System in the country

National Book Development Council

The National Book Development Board has been revi
as 'the National Book Development Council', to
crucial challenges in the field of book development.
main functions of the Council are: (i) to lay down guidel
for the development of the book industry in the context of the ove
requirements of the country; (ii) to foster reading habit among
people; (iii) to promote production of literature, specially relevan
children and rural illiterates; (iv) to encourage authorship particu
in Indian languages and suggest measures for safeguarding the inte
of the authors; and (v) to draft the national book policy.

COPYRIGHT

Copyright protection is governed by the Indian Copyright Act, 1
which came into force in 1958. A Copyright Office registers w
in which copyright exists so that the owners of copyright in such w
can have a prima-facie evidence of their ownership under the Ac
Copyright Board with powers of adjudication in copyright disputes
also been set up.

The Copyright Act 1957 has been amended in 1983, to
the Act, in line with the Paris Text 1971 of the International C
right Conventions with a view to take advantage of the facilities
reprint|translation rights provided to the developing countries u
this Text, and to safeguard authors' interests through settlement of
disputes summarily and in an inexpensive manner by the Copy
Board.

India is a member of two international copyright convent
namely, the Berne Convention and the Universal Copyright Con
tion. The Madrid Multilateral Convention on the avoidance
double taxation was adopted in December 1979 and India has acc
to this convention.

PROMOTION OF LANGUAGES

The policy of the Government is to encourage the developme
all Indian languages including classical, modern and tribal.
grammes are undertaken to achieve the desired objectives with
emphasis on training of teachers in relation to the adoption of the t
language formula and the production of university level textbooks

a view to media switch over from English to regional languages. Without intending to impose Hindi in any form support for promotion of facilities for the teaching of Hindi in non-Hindi speaking states are provisional and financial assistance is given for the appointment of Hindi teachers in their schools; establishing of Hindi Teachers Training Colleges; award of scholarships to students in these states for the study of Hindi beyond the matriculation stage; assistance to voluntary Hindi organisations to enable them to hold Hindi teaching classes; organisations of correspondence course for teaching Hindi; conducting research on the methodology of its teaching and providing Hindi books to various organisations. For promotion and development of tribal, classical and modern Indian languages, a number of schemes for preparation|publication of books, dictionaries, research and instructional material. training of teachers, etc., are being implemented.

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Through the Kendriya Hindi Sansthan, Agra, the Government promotes the development of improved methodology for teaching Hindi to non-Hindi speaking students, preparation of suitable teaching materials and development of improved teaching methods. Through the Central Hindi Directorate, the Government runs programmes relating to the purchase|publication of Hindi books and their free distribution in non-Hindi speaking states in India and missions abroad, Hindi teaching correspondence courses through the medium of English, Tamil, Malayalam and Bengali for foreigners and non-Hindi speaking students, preparation|publication of terminology|bilingual|trilingual dictionaries, etc.

The Commission for Scientific and Technical Terminology (CSTT) New Delhi, has been assigned task of preparation and publication of definitional dictionaries|terminology in the various disciplines, Pan-Indian terminology, Hindi-English glossaries in basic sciences, humanities, social sciences and applied sciences, production of university level books in the subjects of agriculture engineering including polytechnic. veterinary sciences, forestry, medical sciences, including nursing and para-medical and pharmaceutical sciences.

Grant-in-aid to voluntary Hindi organisations working in the field of Hindi in non-Hindi speaking states|union territories and other states| union territories are released for propagation and development of Hindi.

In order to assist non-Hindi speaking states|union territories to effectively implement the three language formula, financial assistance for appointment of Hindi teachers for upper primary, middle, high and higher secondary schools are also sanctioned.

Financial assistance for setting up Hindi Teachers Training Colleges in non-Hindi speaking states|union territories is being sanctioned under another Centrally sponsored scheme. The grant-in-aid is provided mainly to assist the consolidation and further development of Hindi Teachers Training Colleges in non-Hindi speaking states/ union territories and to a limited extent to assist the setting up of a new institution in such of the non-Hindi speaking states/union territories as are in the need of such scheme.

There is a provision of 50 scholarships every year to the students of Hindi Teachers Training Colleges in non-Hindi speaking states| New Delhi. In order to provide material in Hindi in foreign countries where there a sizeable population of Hindi speaking residents, Hindi books are supplied for setting up Hindi libraries in missions abroad. Hindi typewriters and other equipments are also supplied. Hindi scholars are sent abroad for propagation of Hindi under cultura exchange programmes.

Modern Indian Languages

Under the scheme for the development of modern Indian language the Government gives financial assistance to voluntary organisation for bringing out publications like encyclopaedias, dictionaries, book of knowledge and of scientific interests. Grants are given for holdin literary conferences, seminars and exhibitions for the development c Indian languages. Assistance is also given by way of purchasing copie of printed publications. State governments are given special help fo the production of university level books in regional languages.

The Bureau for Promotion of Urdu (BPU), a subordinate offic in the Ministry of Education was set up in 1969. Apart from workin as Secretariat to the Taraqqi-E-Urdu Board which is the highest advisory body to advise the Government on the development of Urdu the BPU develops educational literature in Urdu.

The Government also provides facilities for the study of language other than the mother tongue. For this purpose, the Central Institut of Indian Languages, Mysore, is charged with the responsibility c conducting research in the areas of language analysis, languag pedagogy, language technology and language use. The study of triba languages is one of its important functions. By now, the Institute ha taken up 52 tribal and border languages|dialects for linguistic description and material production. The Institute supports 5 regiona language centres on each at Bhubaneswar, Mysore, Patiala, Pune an Solan to help meet the demands for the trained teachers to implemen the three language formula and assurance to the linguistic minorities

English and Foreign Languages

The Central Institute of English and Foreign Languages, Hyderaba was set up by the Government in 1958, as an autonomous organisatio with the objective of bringing out qualitative improvement in th teaching of English in the country. Subsequently, it expanded its fiel of activities to include the teaching of major foreign languages *vi* Russian, German, French and Arabic and their literatures. In 197 it was declared to be an institution of higher learning deemed to b a university under the University Grants Commission Act.

PROMOTION OF SANSKRIT AND OTHER CLASSICAL LANGUAGES

There are many schemes for propagation of studies of Sanskr and other classical languages like Arabic and Persian.

Registered organisations engaged in development and propagatio of Sanskrit are given grant-in-aid to the tune of 75 per cent of th approved expenditure on some items. During 1983-84 more tha 600 voluntary institutions conducting courses on traditional Sanskr education have been benefited by this scheme.

The Rashtriya Sanskrit Sansthan, an autonomous organisatio with its headquarters at Delhi exercises academic and administrative control over 7 Kendriya Sanskrit Vidyapeethas situated Delhi, Jammu, Allahabad, Tirupati, Guruvayur, Puri and Jaipu where post graduate Sanskrit education on traditional *Shastras* a research in various fields are conducted. Besides, 43 institutions the country are affiliated to it for purposes of examination. Tl Sansthan conducts examination right from *Prathma* to *Vidyavarid* and *Vachaspati* (Ph.D. and D. Lit. respectively.)

Institutions having the potentiality for greater development are indentified and are brought under the scheme of Adarsh Sanskrit Maha Vidyalaya and are assisted to the tune of 95 per cent towards recurring items of expenditure.

The Government is assisting contemporary authors of Sanskrit works in publishing their books. Research institutions and established departments of universities are also assisted to prepare and publish critical editions of rare manuscripts. About 33 publications have come out with Government assistance during 1983-84. Well established research institutions are assisted to prepare and publish descriptive catalogues. Four catalogues|critical editions have been printed with Government assistance during 1983-84. Assistance ranging from Rs 1,000 to Rs 7,000 has been given to editors of 28 journals for improving the journals.

A programme has been launched to bring out reproduction of important out-of-print Sanskrit books at reasonable price through commercial publishers. In the first phase, such of these publications of the erstwhile Nirnaya Saugar Press, Bombay, which have gone out of print have been taken up and about 50 publications have already come out. A similar programme has been launched for the republication of 18 *Puranas* which were originally brought out by Venkateshwara Steam Press, Bombay. Six of them have already come out.

Eminent Sanskrit scholars in indigent circumstances are being helped to the extent of Rs 3,000 each per year less their annual income. About 1,600 scholars all over the country are receiving this assistance.

Under the scheme of award of certificate of honour to Sanskrit, Arabic and Persian scholars, eminent scholars are honoured by the President of India every year. The number of awardees under this scheme has gone upto 203.

An annual Vedic convention is held under the auspices of the Ministry of Education where about 100 scholars in different *Sakhas* are invited with a view to identify the rare Veda Sakhas and their repositories and also to devise ways and means of preserving the original traditions.

HYSICAL
DUCATION

Physical education and sports are today accepted as an integral part of education all over the world. In the new national policy on sports and physical education due emphasis has been laid on promotion of a countrywide programme on physical education and sports. Taking cognisance of potentialities of yoga as a traditional physical fitness activity, teacher training and research programmes in Yoga are encouraged.

akshmibai
ational College
f Physical
ducation

The primary object of the Lakshmibai National College of Physical Education (LNCPE), Gwalior which is one of the two national institutes of physical education and sports established by the Government, is to provide facilities for training of high calibre leadership in physical education for educational institutions and other organisations. The College provides teacher training facilities at the graduate and post-graduate level and also for M. Phil and Doctorate programme in physical education. Since its inception in 1957, the College has produced over 2,200 graduate and post-graduate teachers of physical education including 405 women.

The College also provides extension services, refresher cours for the in-service personnel and implements on agency basis Centr programmes like national physical fitness programme, national pri competition for published literature on physical education and spor etc.

The College has established a National Resource and Docume tation Centre in physical education to serve as a clearing house f professional information in physical education and sports for t general public.

The Society for the National Institutes of Physical Education & Sports

The Society for the National Institutes of Physical Education a Sports (SNIPES) was set up in 1965 by the Government as autonomous body to look after the management and administrati of the two national institutes of physical education and sports namel Lakshmibai National College of Physical Education, Gwalior ar the Netaji Subhas National Institute of Sports, Patiala, and al initiate steps for raising the standards of sports and games throug national coaching schemes and regional coaching centres.

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6 CULTURAL ACTIVITIES

Preservation of the cultural heritage of the country, inculcation of art consciousness among the people and promotion of high standards of the performing and creative arts are some of the objectives of the state policy. In keeping with this, the Central and state governments strive for the promotion of art and culture through national and regional academies of art, dance, drama, music and letters. These institutions and the Department of Culture at the Centre are helped in their objectives by the media of mass communication and voluntary agencies. Apart from this, some eminent persons associated with the fine arts are, from time to time, nominated by the President of India to Rajya Sabha in recognition of their standing in these fields.

VISUAL ARTS

Painting

Important traditions of Indian painting include the murals of Ajanta Ellora and other frescoes, the Buddhist palm leaf manuscripts, the Jain texts, the Deccan, the Mughal, the Rajput and the Kangra schools The Bengal renaissance and the modern trends bring it to the present While the modern trends in Europe and elsewhere have influenced modern Indian painting, Indian folk art and themes have been successfully revived and accepted.

Architecture and Sculpture

Till the advent of modern trends, architecture and sculpture in India were inspired mainly through the religious motif. The best examples are the temples, mosques, fortresses, palaces and other monuments which dot the Indian landscape. Massive buildings that have come up after Independence and the city of Chandigarh symbolise the beginning of the modern period of Indian architecture. Contemporary Indian sculptors have contributed substantially to the creation of a new awareness of mass, volume and space.

Handicrafts

From coarse carpets to the finest muslins, exquisite cotton and silk saris, embroidered shawls, impressive creations in metals, unglazed and glazed pottery, fabulous jewellery—heavy tribal or costume or filigree rugged or delicate woodwork, dolls and puppets are but a few creations of rich and varied repertoire of Indian craftsmanship. The main inspiration is tradition handed down from generations. The heritage of tribal and village activity is sustained by providing economic support to the artisans and by export promotion. Every year, the best among the craftsmen are honoured as master craftsmen.

alit Kala Akademi

To promote the understanding of Indian art, both within and outside the country, the Government established the Lalit Kala Akademi (National Academy of Fine Arts) in 1954. The Akademi strives to promote this objective through exhibitions, publications, workshops and camps. Every year it holds a national exhibition and every three years, the Triennale-India, an international exhibition. The Fifth Triennale-India, held in 1982 drew 46 countries as participants.

The Akademi has brought out a series of monographs and portfolios on ancient Indian art and published the results of new research in Indian arts in its journal, *Lalit Kala.* It has undertaken a programme to copy frescoes and murals in caves, temples, forts and palaces.

The Akademi's publication programme includes a bi-annual art journal, *Lalit Kala Contemporary,* exclusively devoted to contemporary Indian art, monographs on contemporary Indian artists and large multi-colour reproductions of paintings, sculptures and graphics.

The Akademi organises artists camps, seminars and lectures and gives grants to recognised art organisations in the country. It honours eminent artists by electing them as fellows. So far 31 persons have been conferred fellowships. Ten awards of Rs 10,000 each are given to artists on the occasion of the national exhibition.

The Akademi has a permanent artists' studio complex with facilities for training and practice in painting, ceramics, graphics and sculpture at Garhi, New Delhi and at Calcutta. It has regional centres at Madras and Lucknow, where facilities for practical training and work have also been provided. The work of regional centre at Bhubaneswar has been initiated.

In memory of Dr. Ananda Coomaraswamy (1877–1947), the Akademi organises a lecture annually.

PERFORMING ARTS

Music

There are two main schools of classical music namely, Hindustani and Karnataka. Both schools continue to survive mainly through an oral tradition being passed on by the teacher to the disciple and this has led to the existence of family traditions called the *gharanas* and the *sampradayas.*

In recent years there has been a great revival of interest in folk and tribal music, which has been brought to the stage in cities. Growing in popularity is another category of music, which has come to be known as light music.

The patronage to music is both state-supported and popular. The Sangeet Natak Akademi (National Academy of Music, Dance and Drama), All India Radio, Doordarshan, films, voluntary organisations and cultural associations are the main agencies that have brought about a nationwide awareness and appreciation of music.

Dance

Dance in India has an unbroken tradition of over 2,000 years. Its themes are derived from mythology, legends and classical literature. There are two main divisions of Indian dance, namely, classical and folk. Under classical are those dance-forms, which are based on ancient dance discipline and have rigid rules for presentation.

Among the leading forms of classical Indian dance are *Bharat Natyam* *Kathakali, Kathak, Manipuri, Kuchipudi* and *Odissi*. *Bharat Natyam* has roots in Tamil Nadu. *Kathakali* is the dance-drama of Kerala *Kathak* is the principal classical dance of north India and was revitalised as a result of the fusion of Mughal influence with Indian culture Manipur, in the eastern region, has contributed a delicate, lyrical style of dance called *Manipuri*. *Kuchipudi* is a dance-drama from Andhra Pradesh. Its themes are culled from the epics, the *Ramayana* and the *Mahabharata*. *Odissi* from Orissa, once practised as a temple dance, is today widely interpreted by artists. The folk and tribal dances of India are of numerous patterns.

Both the classical and folk dances of India owe their present popularity to institutions like the Sangeet Natak Akademi and training institutes and cultural organisations in different parts of the country. The Akademi gives financial assistance to cultural institutions for training in different forms of dances. To promote advanced study and training in different forms of dance and music, especially those which are rare, the Akademi awards fellowships to scholars, performers and teachers.

Theatre

Theatre in India is as old as her music and dance. The classical theatre survives only in few parts of the country. The folk theatre can be seen in its regional variants in practically every linguistic region. There is also the professional theatre, which is mainly urban-oriented. Besides, a rich tradition of puppet theatre is found in various parts of the country. Among the many forms prevalent are the string puppets, rod puppets, glove puppets and leather puppets (shadow theatre).

There are several semi-professional and amateur theatre groups active in many large cities, performing plays in Indian languages and in English.

Sangeet Natak Akademi

The Sangeet Natak Akademi, set up in 1953, fosters the development of dance, drama and music. As part of its co-ordinating and promotional activities, it holds seminars and festivals, presents awards to outstanding performing artistes, gives financial assistance for production and for holding theatre workshops and extends financial help to traditional teachers and scholarships to students.

In view of the many theatrical, musical and dance forms prevalent in the country, the Akademi has set up a special unit for surveying and documenting them. Its disc and tape library has the largest collection of Indian classical, folk and tribal music and dance and theatre items.

The Akademi is running two national institutions for imparting training in dance. These are the Kathak Kendra, New Delhi and the Jawaharlal Nehru Manipur Dance Academy, Imphal. The Academy ha been helping in the resurgence of the puppet theatre in the country.

The Akademi operates a scheme under which subsidy is given fo publication of books in various Indian languages and in English or music, dance and drama. It honours outstanding performing artiste by making them fellows and confers annual awards.

National School of Drama

The National School of Drama, New Delhi set up in 1959, is full financed by the Government. Since 1975, it is functioning as registered society. It imparts training in dramatic arts leading to 3-year diploma. The school is in touch with parallel institutions all over the world through the cultural exchange programmes between India and other countries. The school promotes research in dramas too.

The activities of the school are exhibited through the media of its various extension programmes like Repertory Company, organisation of theatre workshops at various places and theatre training to children in the age group of 8–14.

Broadcasting

All India Radio has been contributing to bring about an awareness and appreciation of Indian music—classical, light classical, folk and tribal. It has many national programmes to propagate music. The *Vividh Bharati* service broadcasts popular film and light music.

LITERATURE

Rediscovery of ancient and medieval Indian literature and development of modern literature in the major Indian languages and in English mark the literary activities in present-day India. A large number of literary periodicals and magazines, literary institutions and All India Radio have given impetus to the growth of modern Indian literature.

Sahitya Akademi

The Sahitya Akademi (National Academy of Letters) was set up by the Government in March 1954 to work as an autonomous organisation, for the development of Indian letters and to set high literary standards to foster and co-ordinate literary activities in all the Indian languages and to promote through them the cultural unity of the country.

Some of the main functions of the Akademi are : translation of literary works from one Indian language to another and from non-Indian to Indian languages; publication of works on literary history and criticism, books of reference like bibliographies and biographies and works in Devanagari and other Indian scripts and popularisation of the study of literature among the people. The Akademi has regional offices at Bombay, Calcutta and Madras.

An important publication of the Akademi is the *National Bibliography of Indian Literature* (1901–1953) in four volumes, covering books of literary merit in all the major Indian languages and in English published in India or written by Indian authors. These cover English and all the major Indian languages except Dogri, Konkani, Maithili, Manipuri, Nepali and Rajasthani for which a fifth volume is under preparation.

It publishes a bi-monthly journal in English, *Indian Literature,* a quarterly in Hindi, *Samakaleena Bharateeya Sahitya* and a half-yearly in Sanskrit, *Sanskrita Pratibha.*

The Akademi has sponsored two series of publications, first, Histories of Literature of various languages of India and the second, a series of monographs entitled *Makers of Indian Literature* with a brief biography and literary assessment of writers from all over the country, from the earliest times to the present day.

The Akademi is now compiling a detailed *Encyclopaedia of Indian Literature* with the help of over 1,000 writers belonging to the 22 recognised languages.

The Akademi honours eminent men and women of letters by electing them its fellows. It also awards annual prizes to works of outstanding merit in English and in other Indian languages.

Encouragement to Young Artists

Young artists of outstanding promise in the age-group of 18–28 are awarded 75 scholarships every year for advance training in music, classical forms of Indian dances, traditional theatre, drama, painting and sculpture. A scholar gets Rs 400 a month for two years.

Talented Children

Talented children in the age group of 10–14 are awarded 100 scholarships every year for developing their talent in various fine arts such as music, dance, painting, sculpture, etc. Twenty-five scholarships are reserved for children belonging to *gharanas/sampradayas*. A sum of Rs 600 a year is paid to those who undergo training at the place of their residence and double that sum to those who have to shift to a new place for training. In both cases, tuition fee up to Rs 1,000 a year to those receiving training in these fields in an institute and Rs 1,500 a year in the case of those receiving training from individual *gurus* is reimbursed. The scheme has now been transferred to Centre for Cultural Resources and Training, New Delhi.

Fellowships

To provide basic financial support to outstanding persons for creative work in various fields of the performing, plastic and literary arts, in the age group of 25-65, 15 senior fellowships and 35 junior fellowships of the value of Rs 1,000 and Rs 500, respectively per month, each tenable for two years, are being awarded every year since 1979-80. These fellowships are given specified schemes and projects either suggested by the artists themselves or selected at the initiative of the Government. To promote the study of extinct languages and scripts, expertise in which is fast dwinding, fellowships of the value of Rs 600 per month tenable for two years are awarded to 10 scholars each year for higher study/research in epigraphy palaeography, extinct languages, ancient scripts, numismatics, etc.

Ten eminent artists who have achieved high degree of excellenc and have acquired national|international fame but have since retire from professions are awarded fellowships of the value of Rs 2,000 pe year for continuing experimentations in the field of performing, literar and plastic arts.

Persons distinguished in letters, arts and such other walks of life who are above 58 and have an income of less than Rs 600 a montl are considered for grant of financial assistance up to Rs 400 a month

ARCHAEOLOGY

One of the greatest achievements of the Indian archaeology is the dis covery of the Indus Valley civilizaion (discovered in 1921) whicl flourished mainly in the river valleys of the Indus-Saraswati an various cultures antedating it. With the pioneering efforts of Sir Joh Marshall (1876—1958), Daya Ram Sahni (1879—1939), Rakha Das Banerjee (1886—1930), Kashi Nath Dikshit (1889—1946 Madho Sarup Vats (1896—1955), Nani Gopal Majumdar (1893– 1938) and Sir Mortimer Wheeler (1890—1976), many sites lik Harappa, Mohenjadaro, Chandhuaro could be excavated, theret pushing back the history of India by at least three millennia. Aft the Independence practically all the Indus Valley sites went over t Pakistan. But systematic work of the Archaeological Survey India (ASI) under the leadership of Amalananda Ghosh (1910– 1981) made it possible to discover many Indus Valley sites alor the lost bed of river Saraswati. Moreover many sites earlier than tl

Indus (or called Harappan) Valley civilization have also been discovered. One such site now under excavation is Banawali in Haryana, where pre-Harappan, Harappan and post-Harappan cultures have been laid bare. The most important sites of Harappan culture excavated since 1947, include Ropar, Kalibangan, Lothal and Surkotada. The extent of the Harappan (or Indus) civilization has now been discovered even in Uttar Pradesh, Hulas in district Saharanpur is such a site. The northern limit of this civilization is now Manda in Jammu and Kashmir while the southern most site so far discovered is Diamabad in district Ahmadnagar, Maharashtra. Due to the efforts of Indian archaeologists the period from the Vedic age to the time of Buddha, once known as the dark period of Indian history, has now been bridged through the discovery of many neolithic and chalcolithic cultures in different parts of India. At present ASI is going to study the neolithic cultures of the Himalayan and sub-Himalayan regions including the Kashmir Valley, Sikkim and north-east India. The Islands of Lakshadweep, which has yielded remains of pre-medieval and medieval periods, are also been explored.

Ancient remains and historical monuments, about 5,000 in numbers, which are protected under law as monuments of national importance are looked after by the Central Government, while those not of national importance are maintained by state governments after proper protection under their respective legislations. Practically all the state governments have their own Departments of Archaeology to look after monuments, sites and archaeological museums located within their jurisdiction.

Apart from carrying out preservation work of monuments and sites, the Archaeological Survey of India (founded in 1861) as the leading institution in the field of archaeological research and activities, conducts programmes of large-scale problem-oriented exploration and excavation of prehistoric, protohistoric and other ancient sites, as also the architectural surveys, landscaping around monuments, chemical preservation of sculptures, monuments and museum objects, epigraphical research, maintenance of 29 archaeological museums located near ancient sites or group of monuments, publication of archaeological and epigraphical periodicals and books, etc.

The task of implementation of Ancient Monuments and Archaeological Sites and Remains Act, 1958 and the Antiquities and Art Treasures Act, 1972 is also carried out by the ASI. Under the Antiquities and Art Treasures Act, 1972 no object which is not less than one hundred years old (75 years in case of manuscripts, documents and the like) can be exported without a valid permit from the ASI. A permit is also required for the export of works of arts of some of the renowned artists which have been declared as art treasures under this Act. At all international exit points an Experts Advisory Committee functions to issue non-antiquity certificates. The scheme of registration of sculptures and paintings in all media, besides illustrated, painted or illuminated manuscripts which are not less than one hundred years old, is also in operation. This Act also enjoins that the trade in antiquities is to be carried out by persons duly licensed by the Licensing Offices of the ASI. As per the provisions of the Ancient Monuments and Archaeological Sites and Remains Act, 1958 and Rules 1959 permission is required for filming and photographing with stands at Centrally-protected monuments and museums, while no archaeological excavations can be carried out anywhere in India without a license issued by the Director General.

India's expertise in the field of structural and chemical preservation is an acknowledged fact. Indian conservators from the ASI also work abroad and in recent years two teams each visited Kampuchia and Bhutan.

The ASI conducts a Post-graduate Diploma Course in Archaeology in its School of Archaeology which has attracted students from neighbouring countries as well.

The ASI has a library, which is one of the oldest in the country. It contains rare material not only on India but also on South-East Asia and West Asia. There is a separate library of photographs apart from a study-collection of ancient ceramics of Indo-Pak sub-continent, one of the finest in the country.

Archaeology is now taught as a distinctive subject in the post-gradute level in many universities which also carry out archaeological explorations and excavations.

MUSEUMS

The museums are repositories of cultural, historical, technical, industrial or other kinds of materials for preservation against decay and for transmission to posterity as records for history. They serve as important audiovisual means of education.

The Constitution makes the states primarily responsible for setting up and maintenance of museums. The Central Government has, however, set up a number of important museums and provides financial assistance for the development of private museums, university museums, etc. Great emphasis is laid on the documentation of the existing collection in the Government and private museums, preservation of the collections by using latest scientific aids and publication of catalogues of collection.

In the field of Indian art and archaeology, the Government has established the National Museum, New Delhi; Indian Museum, Calcutta and Salar Jung Museum, Hyderabad. In the contemporary history and art, Victoria Memorial Hall, Calcutta; National Gallery of Modern Art, New Delhi and the Nehru Memorial Museum and Library, New Delhi are three museums financed by the Government. The National Council of Science Museums looks after science museums/centres. A National Research Laboratory has also been set up.

The National Museum, established in 1948, is one of the premier museums in the country and its main activities are in the field of acquisition, exhibition, conservation, publication and education. The Museum has been entrusted with the work of co-ordination of festivals of India in various countries to project the cultural image of India. The Indian Museum, the first museum of the country having been established in 1814, is the most illustrious art and archaeology museum. The Salar Jung Museum has a wide range of collection of objects of art. It has more than 7,500 manuscripts in Persian, Arabic and Urdu. The Victoria Memorial Hall is mainly a historical art gallery and contains relics and mementos relating to British period of Indian history covering 1700–1900 AD. This is now being converted into a period museum, in which due place is being given to the freedom struggle of the Indian people. Materials are being collected so as to set up an extensive gallery for projecting tribal and peasant movements of the eighteenth and nineteenth centuries.

The National Gallery of Modern Art, set up in 1954, has a collection of over 3,500 works of art, representing various styles, spanning more than a century. Among the distinguished Indian artists whose works are in the collection are : Raja Ravi Varma (1848–1906), Abanindranath Tagore (1871–1951), Nandalal Bose (1883–1966), Devi Prasad Roy Chowdhury (1899–1975), Binoda Behari Mookerjee (1904–1980), Ramkinkar Vaij (1910–1980), Rabindranath Tagore (1861–1941), Gaganendranath Tagore (1867–1938), Jamini Roy (1887–1972) and Amrita Sher-Gil (1913–1941). The Gallery arranges special exhibitions of national and international art. It brings out publications also.

Some of the other important museums are : Indian War Memorial and Archaeological Museum at Red Fort, National Museum of Natural History, Crafts Museum and Rail Transport Museum, all in New Delhi; Asutosh Museum in Calcutta; State Museum, Hyderabad; Prince of Wales Museum of Western India, Bombay; Government Museum, Madras; Bharat Kala Bhavan, Varanasi; Municipal Museum, Allahabad; State Museum, Lucknow and Calico Textile Museum, Ahmadabad. There are archaeological museums at ancient sites *e.g.* Konarak, Amaravati, Nagarjunakonda, Sanchi, Nalanda, Sarnath, etc. There are also museums of dolls, textile designs and for children in places like Delhi, Ahmadabad and Lucknow. A few scientific and technological museums have also been established in Calcutta, Bangalore and Bombay. There are over 375 museums in the country.

The National Council of Science Museums administers and manages the Birla Industrial & Technological Museum, Calcutta, Visvesvarya Industrial & Technological Museum, Bangalore and Nehru Science Centre, Bombay.

Training in Museology

Regular degree and diploma courses in museology are being conducted by the universities of Aligarh, Baroda, Bhopal, Calcutta, Pilani and Banaras.

The Government organises annually museum camps at different places in India, a six-week in-service training course as well as a three-month course on conservation of museum materials in the National Museum, New Delhi, and also, awards fellowships for training in India and abroad. The National Gallery of Modern Art has since introduced a course in restoration and preservation of art works. The National Research Laboratory for Conservation of Cultural Property, Lucknow provides training and technical assistance to institutions and has research programmes of its own.

ARCHIVES AND RECORDS

The records and manuscripts constitute an important part of the rich Indian cultural heritage. These are the major repository of the contribution that our predecessors made in the diverse fields of religion, philosophy, astronomy, literature, history, medicine and science. They constitute the primary source of reconstruction of India's past. The Government has jurisdiction only over libraries established by it and institutions of national importance declared so. However, it takes initiatives to secure the voluntary co-operation of the state governments and to promote a co-ordinated development of national, state and other libraries.

ational rchives

The National Archives of India, New Delhi, is the largest and perhaps the best organised record repository in Asia. It has in its custody several million public records, maps, private papers, microfilms, books, occupying a total length of 25 km of shelf space. Several hundred research scholars are provided facilities for research. Among the significant activities being carried out by the Department is the preparation of *Guide to Records in the National Archives of India,* preparation of national register of private records, creating archival consciousness among the masses through exhibitions, seminars and lectures, apart from an elaborate publication programme. Another scheme *Towards Freedom* aims at publishing records on the national movement and transfer of power during 1937–47 in ten volumes. The Department runs a School of Archival Studies which is the only one of its kind in Asia, offering a wide range of courses in different aspects of archival science.

anuscripts ibraries

The Khuda Bakhsh Oriental Public Library, Patna, has one of the richest collections of Arabic and Persian manuscripts and Mughal and Central Asian paintings. Presently, the Library possesses some 14,000 manuscripts and 2,000 paintings and is fast becoming a centre for preserving and dissemination of knowledge of Arabic and Persian learning and Islamic and medieval Indian studies.

The Tanjore Maharaja Sarfoji's Saraswati Mahal Library which has its roots in the time of the imperial Cholas was taken over by the then Madras Government in 1918. It has a rich collection of about 40,000 manuscripts in Sanskrit, Marathi, Tamil, Telgu and other languages, besides a collection of over 23,000 books in the Indian and European languages covering various disciplines. The Raza Library, Rampur, has one of the richest collection of India with holdings of 15,000 manuscripts.

Some of the other important manuscript libraries are : Government Oriental Manuscript Library, Madras; Oriental Research Libraries at Pune and Vadodra; Sanskrit University Library, Varanasi; Vishesh-waranand Vedic Research Institute Library, Hoshiarpur and Maulana Azad Aligarh Muslim University Library, Aligarh. In addition, there are over 500 other collections belonging to state governments and private agencies which have thousands of manuscripts.

IBRARIES

Libraries are the keepers of our history and culture. The development of the library system is an important component of the scheme of non-formal education and continuing education. Constitutionally the subject libraries is included in the State list. The Centre has jurisdiction only over libraries established by the Government and institutions of national importance as declared by it. There are more than 60,000 libraries of all descriptions in the country.

The Central Reference Library, Calcutta, is responsible for the implementation of compilation, editing, printing and sale of the Indian *National Bibliography.* This is a monthly/annual bibliography containing the entries of current Indian publications in major Indian languages and in English. The library is compiling *Index Indiana* a quarterly Index to articles appearing in current Indian periodicals in major Indian languages.

opyright ibraries

Under the Delivery of Books and Newspapers (Public Libraries) Act, 1954, four libraries are entitled to receive a copy of every new book and magazine published in the country. These are National Library Calcutta; Central Library, Bombay; Cannemara Public Library Madras and Delhi Public Library, Delhi.

Other Libraries

There are also specialised libraries providing facilities to researchers Prominent among them are the Indian Council of World Affairs, Nev Delhi; Indian Statistical Institute, Calcutta; Gokhale Institute, Pune Theosophical Society, Madras; National Council of Applied Economi Research, the Indian Institute of Public Administration, and the Centra Secretariat Library, all in New Delhi. Apart from these some of th bigger universities also have sizable collections.

INSTITUTIONS OF TIBETAN AND OTHER HISTORICAL STUDIES

Many centuries ago, Indian scholars took arduous journeys across th Himalayas to Tibet and with them they carried Indian philosophy an thought. The evolution of Tibetan thought and culture was a conse quence of this interaction.

At the initiative of Jawaharlal Nehru (1889–1964), a number o Buddhist institutions were started in India. Amongst them were th School of Buddhist Philosophy, Leh, set up in 1959, now renamed a the Central Institute of Buddhist Studies, and the Central Institute o Higher Tibetan Studies, Varanasi. Both are fully financed by the De partment of Culture. The main objectives of these institutions ar preservation of Tibetan culture and tradition and imparting of studie in ancient and traditional subjects through a modern university frame work and conducting research in Tibetan studies. Besides, Govern ment gives grants to Sikkim Research Institute of Tibetology, Gangtok and Library of Tibetan Works and Archives, Dharamsala.

The Institute of Tibetan Studies was established in Varanasi as constitutent wing of Varanaseya Sanskrit Viswa Vidyalaya. It becam fully autonomous organisation in 1977 and was renamed as th Central Institute of Higher Tibetan Studies. The Institute has planned programme of training, research and publication which woul bring light the Tibetan heritage, particularly a body of knowledg of the Indian heritage which was lost to Sanskrit and Pali but wa preserved in Tibet.

The Central Institute of Buddhist Studies, Leh, was established i 1959 to train students in Buddhist philosophy, literature and art The Institute is affiliated to the Sampurnanand Sanskrit Vishwa Vidya laya, Varanasi.

INSTITUTIONS OF ANTHROPOLOGY AND ETHNOLOGY

The Anthropological Survey of India, Calcutta and the Nation Museum of Man, Bhopal are the subordinate offices under the Depar ment of Culture.

Anthropological Survey of India

The Anthropological Survey of India has started functioning as a independent organisation since 1 December 1945. From a very mode beginning, the Survey has grown as a premier research institute of a thropological research at the national level and is now the biggest its kind in the global perspective. Presently it has seven region offices and one sub-regional office located at different parts of th country with head office at Calcutta. It conducts research to reco and analyse the bio-cultural diversities of Indian population. undertakes explorations to unearth, preserve and study the ancie skeletal remains in the context of biocultural history of Indian pop lation and carries out field and laboratory based investigations amo

Indian population with emphasis on tribes and weaker sections on the problem of contemporary relevance. The Survey collects, preserves, documents and displays ethnographic materials through its museums located at the head office and different regional and sub-regional offices.

ational Museum of Man

The National Museum of Man, Bhopal has been conceptualised as an organic whole, dedicated to unfold the story of human-kind highlighting human biological evolution and cultural patterns with particular reference to India.

ROMOTION F CULTURE

The Centre for Cultural Resources and Training was set up in 1979 as an autonomous organisation fully financed by the Government. The centre has taken over the scheme of propagation of culture which was being implemented by Delhi University from 1970 onwards.

The broad objective of the centre is to revitalise the educational system by creating an understanding and awareness among the students about the plurality of regional cultures of India and integrating this knowledge with the curriculum subjects. To fulfil its objectives, the centre organises a number of training programmes for the benefit of inservice teachers drawn from primary/high/higher secondary schools in different parts of the country.

The centre is collecting resources in the form of slides, photographs, films and recordings so as to prepare educational materials *i.e.*, kits, charts, booklets for school children to educate them about India's artistic and cultural heritage.

The centre took over the scheme-cultural talent search scholarship scheme from the Department of Culture in December 1982. The objective of the scheme is to provide facilities to outstanding young children in the age group of 10–14 studying either in recognised schools or belonging to families of practising traditional performing or other arts to develop their talent in the various cultural fields laying special emphasis on rare art forms.

NDIA IN WORLD HERITAGE

The World Heritage Committee, constituted by UNESCO under the provision of the International Convention for the Protection of the World Cultural and Natural Heritage, has recommended the inscription of four cultural monuments from India in the World Heritage. These are : (1) Taj Mahal, (2) Ajanta Caves, (3) Ellora Caves and (4) Agra Fort.

FESTIVALS

Indian festivals are as varied in origin as they are large in number. These festivals have their origin in religion and in myths and legends. Some are held to celebrate the birthday of national heroes and some others to mark the change of season or harvesting of crops. The main festivals in India are : *Diwali, Dussehra, Holi, Shivratri, Janmashtami, Ram Navami, Muharram, Id-ul-Zuha, Id-ul-Fitar, Id-i-Milad,* Christmas, Good Friday, *Vaisakhi, Gurpurabs,* Buddha Jayanti, Mahavir Jayanti *and Jamshed Navaroz.* Some important festivals are observed as closed public holidays on all-India basis and others on a limited or selective basis. Republic Day (26 January), Independence Day (15 August) and Mahatma Gandhi's birthday (2 October) are observed as national holidays.

7 SCIENTIFIC RESEARCH

Scientific research in India is carried out under three major secto *viz.* the Central Government, the state governments and the variou in-house research and development units of the industrial undertaking both under the public and private sectors.

There are about 190 research laboratories within the purview the major scientific agencies carrying out research in different area Some of the major scientific agencies are the Department of Scienc and Technology, Department of Atomic Energy, Department of Spac Council of Scientific and Industrial Research, etc. Under the Centr ministeries/departments there are a large number of scientific inst tutions which carryout research programmes of practical relevance t their areas of responsibility. The state governments supplement th efforts of the Central Government in areas which are of prime impo tance to them *viz.*, agriculture, animal husbandary, fisheries, publ health, etc. The institutions of higher education carry out sizeab work in the field of science and technology and are supported by th University Grants Commission, the Central and state government They also carry out sponsored research.

A number of incentives are being provided by the Government industrial establishments in the private and public sectors to encoura them to undertake research and development activities. Consequentl scientific research is gaining momentum in many of the industrial estal lishments. As on 1 April 1984 there were more than 850 in-hou research and development units in the public and private sectors whi were recognised by the Department of Science & Technology.

The expenditure on research and development and related scienti and technological activities has increased from Rs 4.68 crore 1950-51 to Rs 1,237·56 crore in 1982-83 and is expected to touch t figure of about Rs 1,430 crore in 1983-84. The total allocati during the Sixth Five Year Plan for scientific and technological ac vities (both plan and non plan) is Rs 3,367.19 crore as again Rs 1,330.64 crore during the earlier plan period. This, however, do not include the outlays for defence research and development orga sations and other organisations outside the Central Government such as industry, state government and state government undertakings.

Indian science began to make an impact on the international scene; the outstanding contributions of Jagadish Chandra Bose (1858–1937), Prafulla Chandra Ray (1861–1944), Darashaw Nasherwan Wadia (1883–1969), Srinivas Ramanujan (1887–1920), Chandrasekhar Venkataraman (1888–1970), Sisir Kumar Mitra (1890–1963), Birbal Sahani (1891–1949), Prasanta Chandra Mahalanobis (1893–1972), Meghnad Saha (1893–1956), Satyendra Nath Bose (1894–1974), Shanti Swarup Bhatnagar (1894–1955), Kariamanikkam Srinivasa Krishnan (1898–1961), Tiruvenkata Rajendra Seshadri (1900–1975), Panchanan Maheshwari (1904–1966), Homi Jehangir Bhabha (1909–1966) brought laurels to the scientists and international recognition to scientific work in India.

CIENCE OLICY

The Government's science policy is guided by the Scientific Policy resolution adopted by Parliament on 4 March 1958. One of the major objectives of this resolution is to secure for the people the benefits from the acquisition of scientific knowledge and its application. The resolution also sets out some other aims like encouraging individual initative for the acquisition and dissemination of knowledge as well as the discovery of new knowledge, fostering programmes to train scientific and technical personnel to fulfil the needs in the fields of science and education, agriculture, industry and defence and ensuring an adequate supply of scientists and recognising their work.

The Government had consistently laid emphasis on the development of science and technology as major instruments for achieving national goals; self-reliance, economic and social development. Substantial support has been provided for the creation of a sound base in science and technology, in education and training and in all sectors where applications are to be found. Significant achievements have been recorded as a result of this policy.

echnology olicy tatement

The technology policy statement announced in January 1983 is in response to the need for guidelines to cover wide-ranging and complex set of related areas keeping in mind the capital scarce character of a developing economy. It aims at ensuring that country's available natural endowments, especially human resources, are optimally utilised for a continued increase in the well-being of all sections of the people. Technological advancement is sought to solve country's multifarious problems and to be able to safeguard the independence and unity. Among its objectives are attainment of a technological competence and self-reliance, provision of minimum gainful employment, making traditional skills commercially competitive, ensure maximum development with minimum capital, modernisation of equipment and technology, conservation of energy, ensure harmony with environment, etc.

XPENDITURE

An idea of expenditure on scientific research and development at the national level as also the budget of major science and technology organisations is given in tables 7.1 and 7.2. It may be seen therefrom that there has been a substantial growth in the expenditure on research and development in all sectors.

TABLE 7.1
EXPENDITURE ON SCIENTIFIC RESEARCH AND DEVELOPMENT

(Rs in crore)

Sector	Expenditure on Research and Development			
	1980-81	1981-82	1982-83	1983-84 (estimated)
Central Sector .	617·22	765·15	963·56	1,108·09
State Sector . .	75·73	91·00	112·62	126·13
Private Sector . .	120·69	147·00	161·38	193·65
Total .	813·64	1,003·15	1,237·56	1,427·87

TABLE 7·2
BUDGETS OF MAJOR SCIENTIFIC AGENCIES

(Rs in lakh)

Name	1980-81	1981-82	1982--83
1. Department of Atomic Energy . . .	7,347·81	8,826·06	10,563·13
2. Council of Scientific and Industrial Research .	6,900·00	7,877·08	10,081·50
3. Defence Research and Development Organisation . . .	7,970·00	10,483·36	12,199·96
4. Indian Council of Agricultural Research .	9,744·67	11,149·50	13,121·50
5. Indian Council of Medical Research . .	900·11	1,195·13	1,423·15
6. Department of Science and Technology . . .	4,063·69	4,608·01	6,051·06
7. Department of Space .	5,601·56	7,503·44	8,605·17
8. Department of Electronics	540·55	751·11	847·55
9. Department of Environment . . .	373·99	546·88	905·07
10. Department of Ocean Development . .	—	788·43	4,935·94
11. Department of Non Conventional Energy Sources	400·44	989·82	1,203·20
Total . . .	43,842·82	54,718·82	69,937·23

APEX ADVISORY BODY

Government constituted in March 1981, a Cabinet Committee on Science and Technology (CCST) headed by the Prime Minister. This Committee reviews the overall progress of the science and technology programmes and takes decisions on high level policy matters, corrective measures that are needed, major investments, etc. A Scienc Advisory Committee to the Cabinet (SACC) has also been constitute as the apex advisory body on science and technology. It is heade by the Member (Science) in the Planning Commission and include in it a wide spectrum of scientists and technologists representing different areas of scientific endeavour. The Committee is an advisor body to the Cabinet, and is serviced by the Department of Scienc and Technology. The principal tasks of SACC are : tendering advic on the formulation of science and technology policy of Governmen and the manner of its implementation, identifying and recommending measures to enhance the country's technological self-reliance considering policy issues relating to the development and application of science and technology, considering organisational aspects of science and technology organisations/institutions including measures to provide adequate linkages between the scientific community, educational institutions, research and development establishments, industry and Government machinery; considering the filling up of critical gaps in national competence; promoting technical cooperation among developing countries and issues concerning science in international relations.

TIONAL
ARDS

ional Bio-
chnology Board

The National Bio-Technology Board was set up in January 1982 with the main objective of evolving a national co-ordinated programme and long-term plan of research and development, utilisation of known technologies, strengthening of existing infrastructure and setting up of centres in the newly developed thrust areas of bio-technology.

Safety guidelines for conducting recombinent deoxyribo nucleic acid (DNA) research has been prepared. A two-year programme of training courses and workshops has been started in the area of man-power development. A unit has been set up to produce enzymes needed for genetic engineering research. A Standing Advisory Committee for USA and Canada has been formed for providing continuous feedback on research and development and industrial progress in North America for information of Indian scientists working there. With contribution from various Government research and development agencies, a core fund has been formed for providing support for these activities and inter-institutional programme and creating infrastructure facilities. Programmes have been evolved/are being evolved and implemented in pursuance of the objectives of the Board. At the initiative of UNIDO, it has been decided that an International Centre for Genetic Engineering and Bio-Technology (ICGEB) would be set up in India and the other in Triesta (Italy).

ational Science
Technology
ntrepreneurship
evelopment
oard

The National Science and Technology Entrepreneurship Development Board was set up in January 1982 with the main objective of dealing with the problem of unemployment and inappropriate employment against qualified science and technology personnel as also to ensure institutional mechanism at the central level for entrepreneurs desirous of setting up of production ventures; to promote opportunities for gainful self-employment for them, etc. The training programmes organised by the Board have culminated in the launching of some projects in the areas of electronics, chemicals, pharmaceuticals, rubber and plastics. Case studies have also been undertaken to study the current procedures of starting small scale industries and an analysis of success and failures of science and technology entrepreneurs.

SCIENCE AND TECHNOLOGY

The Department of Science and Technology (DST) which was set up in 1971 has been assigned the responsibility of promoting new areas of science and technology; undertaking or financially sponsoring scientific and technological surveys, research, design and development, supporting national research institutions and scientific bodies; co-ordinating all activities relating to international science and technology collaboration except in specific areas assigned to other agencies; dealing with the promotion of and support to indigenous technology; disseminating scientific and technological information; co-ordinat multi-institutional inter disciplinary activities in areas of science a technology and providing secretarial support to the Science Advis Committee to the Cabinet.

Over the years the Department has made sustained efforts promote and accelerate the development of science and technology, the areas relevant for societal application, co-ordination of inter-dis plinarily multi-institutional programmes and providing support academic and other research institutions for carrying out basic a applied research. The Department through a combination of me hanisms has been able to make a significant impact across the scienti community in terms of funding, development of manpower and cap bilities, creation of infrastructural facilities and in creating awarene about the importance of science and technology including popularis tion of science. A concerted effort has been made to ensure grea interaction among the scientific community, establishment of linkag between national laboratories, academic institutions, users and t scientific community as a whole, growing and nurturing excellence a strengthening and consolidation of the scientific efforts which wou lead to meaningful results. The Department has been catalytic a instrumental in identifying, formulating and implementing a lar number of programmes with the help of the expertise available with the country and abroad, in frontline emerging areas such as bi technology, genetic engineering, materials, plasma physics, etc. The programmes will have a longer gestation period but will ultimate result in very useful findings of direct relevance to national develo ment.

PROMOTION SCHEMES

Some of the operational schemes are : research and developme funding schemes such as Science and Engineering Research Coun and the General Research Scheme. These are being given a great thrust by providing inter-linkages between the schemes and identifyi specific thrust area programmes in various disciplines of science a technology. Identified priority areas for research have been strengthe ed by providing support to institutions where programmes have be evolved around outstanding individual scientists/groups.

As a part of the promotional programmes, emphasis has also be given to encourage the participation of younger scientists in scien and technology activities in the country by providing them suppo for participation in international conferences and encouraging creati research through project support by giving special awards. Meetin of young scientists for discussion on science and technology issues a also encouraged.

An important element of science and technology promotion whi relates to strengthening of infrastructure facilities which are requir by the large scientific community in the country has also been take into account by creating seven Regional Sophisticated Instrumentatio Centres in the country in addition to specialised instrumentatio facilities.

A three pronged approach has been adopted in the area of eng neering science for identifying thrust areas in sector crucial to t national economy; supporting scale up of research in laboratories f its transfer to industry and adapting or modifying foreign technolo to suit the country's requirements and conditions. The scope of t programme ranges from projects covering sophisticated technologi such as cryogenics to simple but relevent processes, systems and machines needed in the rural environment.

Other promotional schemes which have made considerable progress during the years are those relating to technology development for Scheduled Castes and Scheduled Tribes and other weaker sections; science and technology for women and assistance to professional bodies.

National Coordination of Testing and Calibration Facilities

The programme of national co-ordination of testing and calibration facilities was initiated in March 1982 and it is proposed to incorporate the existing accreditation procedures of other departments and agencies to evolve a set of guidelines, criteria procedures, etc., for testing, which will be uniformally applicable by all. Also a hierarchy of standards, laboratories-with National Physical Laboratory (NPL) at the apex, is proposed to be established for calibration services to testing laboratories. The processing purpose is to encourage technical co-operation between various testing laboratories, ensuring compatibility of test results and their traceability to the accuracy of the national standards. An infrastructure is being set-up and mechanisms are being evolved and initiated to set rolling the process of accreditation of testing laboratories in priority areas at the national level.

Natural Resources Data Management System

The Natural Resources Data Management System project was launched in 1981 with a view to evolving an appropriate methodology for collection, collation, storage, analysis and dissemination of data on natural resources in a given region in its totality. This would be achieved by evolving standardised formats in which natural resources and socio-economic data would be presented in an integrated manner, so that linkages amongst various hierarchial units, viz., state, district, block, village, etc., could be studied. This information will be utilised for the purpose of planning and development.

National Information System

Under the National Information System for Science and Technology (NISSAT) programme, activities relating to dissemination of scientific information have been accelerated. In addition to strengthening the activities of the existing Information Centres on leather, drugs, machine tools, food and crystallography, two more centres-one ir the field of textiles and the other in the field of chemicals—have been approved.

National Council for Science and Technology Communications

A National Council for Science and Technology Communication (NCSTC) comprising representatives from Central and state governments, mass media, voluntary agencies, etc., has been set up t prepare blue prints|action plans for popularisation of science an technology and work towards the growth of scientific temper i India.

State Science and Technology Councils

To encourage scientific activities at the state level, the scheme o providing assistance for development of State Councils for scienc and technology has gained further momentum. Twenty one Stat Councils for science and technology and/or State Departments o Science and Technology have already been formed.

INTER-NATIONAL CO-OPERATION

There has been a sustained effort over the years to promote inter national scientific and technological co-operation with developing a well as developed countries. Recent developments have led to the reiteration of the importance of co-operative activity with the countries in the neighbourhood of India and identification of an actual mechanism to give it a viable and dynamic shape. Similar efforts are being made with regard to regional co-operation on an inter-continental basis with the African countries through the UN Commission for Africa. On the global level, negotiations are being continued to finalise the statutes for the Centre for Science and Technology for the Non-Aligned and other Developing countries.

Scientific and technological co-operation has reached new dimensions with a number of countries including USSR, France, USA, Sweden, etc. in terms of identification and initiation of new programmes of co-operation as well as evolving respective modalities for their implementation. Continued attention is also being paid to the activities of the United Nations Inter-Governmental Committee on Science and Technology for Development.

TECHNOLOGY UTILIZATION

Promotion and support to indigenous technology has been rendered through several measures like registration of in-house research and development units set up in the industries, appropriate fiscal incentives for expenditure incurred on scientific research and also for contributions to scientific research institutions, delicensing of industries based on indigenous research and development, investment allowance at enhanced rates for commercializing indigenous technology custom duty exemption to research institutions of non commercial nature for import of scientific instruments, etc. Uptill now 851 in-house research and development units of various industries has been registered with DST.

PUBLIC SECTOR UNDERTAKING

The National Research Development Corporation (NRDC) and Central Electronics Ltd. (CEL) are the two public sector undertakings under the control of the Department of Science and Technology. The Central Electronics Ltd., has perfected and upgraded the indigenous know-how in the production of professional ferrites, audio-visual systems, photo-voltaic modules and systems. Photo-voltaic modules manufactured by CEL have been installed in the communication net work, off-shore platforms, water pumping set for drinking and irrigation purposes in remote areas. The National Research Development Corporation has made progress in activities pertaining to commercialzing indigenous technology and promoting/utilisation of such technology through equity participation, partial financial assistance for developmental projects, assisting in horizontal transfer of technology, promotion of inventions by giving prizes, awards, etc.

NATIONAL SURVEYS AND OTHER INSTITUTIONS

The Survey of India, Dehra Dun and the National Atlas Thematic and Mapping Centre, Calcutta are the two attached offices under the control of the Department of Science and Technology. The Survey of India prepares topographical and geographical maps of the country on various scales needed for survey support for defence/departments and other purposes. It also undertakes several field and topographical surveys on various scales for developmental projects such as coal-fields, irrigation, power, communication, flood control, water supply, forestry, steel projects, tunnel alignments, etc. The National Atlas and Thematic Mapping Organisation has so far published six atlases including the great *National Atlas of India* in eight volumes containing

300 plates depicting the general and geopolitical, physical and socio-economic structure of the nation. The organisation has launched a programme of land-use and land-form surveying and mapping under which very large-scale land-form and land-use maps of each development block of 41 selected districts of India will be prepared. The organisation is also working on the preparation of an *Environmental Atlas*.

A number of autonomous scientific institutions in the country are fully or partially supported by DST through regular annual grants. The scientific aims and work of these institutions pertain to the enhancement of national science and technology capabilities through the accomplishment of time-bound research projects of national relevance. These institutions are: (1) The Birbal Sahni Institute of Paleobotany, Lucknow; (2) The Bose Institute, Calcutta; (3) The Indian Association for Cultivation of Science, Calcutta; (4) The Maharashtra Association for the Cultivation of Science, Pune; (5) The National Institute of Immunology, New Delhi; (6) Padmaja Naidu Himalayan Zoological Park, Darjiling; (7) Raman Research Institute, Bangalore; (8) Sri Chitra Tirunal Institute for Medical Science and Technology, Trivandrum and (9) Wadia Institute of Himalayan Geology, Dehra Dun.

ATOMIC ENERGY

The Atomic Energy Commission, set up in 1948, is responsible for formulating the policy for all atomic energy activities in the country. The Department of Atomic Energy (DAE), set up in 1954, is the executive agency for implementing the atomic energy programme.

The Bhabha Atomic Research Centre (BARC) at Trombay near Bombay, started in 1957, is the largest single scientific establishment in the country. Most of the research and development on the application of atomic energy is done at BARC. At present two experimental nuclear reactors are in operation at Trombay—a one mega watt (mw) swimming pool type reactor *APSARA* and a 40 mw reactor *CIRCUS*. A zero energy experimental thermal reactor *ZERLINA* and a fast critical facility *PURNIMA* were used for carrying out reactor physics experiments. A fifth 100 mw research reactor *DHRUVA* is nearing completion at Trombay.

The Variable Energy Cyclotron Centre (VECC) set up at Calcutta by BARC is a national facility for carrying out advanced experimental research in nuclear sciences. The VECC is also used for controlled direct irradiation of biological and agricultural products. The High Altitude Research Laboratory of BARC at Gulmarg provides facilities for high altitude research to all scientific institutions and universities in India. BARC has a Nuclear Research Laboratory at Srinagar as well. A Centre for Advanced Technology for research in fusion, lasers and accelerators is being established at Indore.

The seismic station of BARC at Gauribidanur near Bangalore makes it possible to detect and determine the location of occurrence of underground nuclear explosions.

BARC is the only producer of radio isotopes and equipment in the country. About 400 radioactive products and labelled compounds are produced at BARC and every year about 45,000 consignments of radio isotopes and equipment are supplied to users in the country and abroad. Radio isotopes are used in a number of areas such as diagnosis and treatment of diseases, industrial radiography, developing high yielding disease resistant mutants of rice, wheat, groundnut, etc. A commercial radiation sterilization plant at Trombay, called *ISOMED,* provides sterilization services to the medical products industry in the country. The Radiation Medicine Centre at Bombay uses radio isotopes for diagnostic and therapeutic applications.

Besides nuclear sciences, research and development work in a wide range of fields including metallurgy, vacuum technology, magneto hydrodynamics, laser, plasma physics, electronics, agriculture biology, medicine and control engineering is being done at BARC. The technological know-how developed in a number of areas has been passed on to the industry. BARC also conducts a country-wide personnel monitoring service for evaluating radiation exposure of workers in institutions using radiation sources.

The Reactor Research Centre (RRC) at Kalpakkam near Madras is primarily for carrying out the research and development work needed to develop fast reactor technology. A 15 mwe (Mega watt electrical) Fast Breeder Test Reactor (FBTR) at RRC will be commissioned towards the end of 1984.

NUCLEAR POWER

The Power Project Engineering Division (PPED) of DAE is responsible for the construction and operation of nuclear power stations. PPED is operating three nuclear power stations, namely 2x210 mwe Tarapur Atomic Power Station at Tarapur nearly 100 km north of Bombay and the 2x220 mwe Rajasthan Atomic Power Station at Rana Pratap Sagar near Kota. The reactor of unit-I of the Madras Atomic Power Station attained criticality on 2 July 1983. The unit synchronised to the grid and power flow was switched on by the Prime Minister on 23 July 1983. Another 2x235 mwe nuclear power station is at a fairly advanced stage of construction at Narora in the western part of Uttar Pradesh. Construction of the fifth nuclear power station consisting of 2x235 mwe units at Kakrapar has also begun.

The Tarapur Atomic Power Station is based on enriched uranium fuelled boiling water reactors while the subsequent ones are all natural uranium fuelled heavy water moderated and cooled reactors. Besides, a small heavy water plant functioning at Nangal in Punjab, there are four heavy water plants at Vadodara, Kota, Talcher and Tuticorin. Two additional heavy water plants have been taken up at Thal-Vaishet (Maharashtra) and Manuguru (Andhra Pradesh).

PUBLIC SECTOR UNDER-TAKINGS

The Atomic Minerals Division (AMD) is one of the first units started by the AEC. AMD with its headquarters at Hyderabad is responsible for prospecting and development work related to uranium, thorium, beryllium, niobium and tantalum. The Indian Rare Earths Ltd. (IRE), a Government company under the DAE, operates the mineral sands industry in Manavalakurichi and Chavara and the rare earths plant at Alwaye. It also produces thorium products at Bombay. IRE is setting up the Orissa Sands Complex (OSCOM) for enhancing rare earths production. The Uranium Corporation of India Ltd. (UCIL), another public sector undertaking, mines and processes uranium ore at Jaduguda in Bihar. The Nuclear Fuel Complex (NFC) at Hyderabad fabricates nuclear fuel for the power reactors and also produces zirconium alloy products and stainless steel tubes. NFC also produces certain special materials needed for electronics industry. The Electronics Corporation of India Ltd. (ECIL), Hyderabad in order to exploit the expertise developed in BARC, manufactures electronic instruments and equipment for nuclear as well as non-nuclear uses. ECIL also makes consumer electronics goods such as TV sets, calculating machines and computers.

Another area in which India has developed expertise is the technology of underground nuclear explosions. On 18 May 1974 India became the sixth nation to conduct a nuclear experiment.

SPACE RESEARCH

The Indian space programme began in 1962 when the Indian National Committee for Space Research was formed in the Department of Atomic Energy. In 1969, the Indian Space Research Organisation (ISRO) was created to plan, manage and execute the nation's growing activities in space science, space technology and space applications.

The Government established the Space Commission and the Department of Space (DOS), in June 1972. It entrusted to DOS the responsibility for conducting India's space programme. ISRO functions under DOS as its research and development organisation.

The Space Commission, the Department of Space and the Indian Space Research Organisation have their headquarters in Bangalore.

The primary aims of the Indian space programme are the application of space science and technology to further national developmental objectives in mass communication and education *via* satellites, the survey and management of natural resources through remote sensing technology from space platforms and the development of space technology with the maximum degree of self-reliance.

INDIAN SPACE RESEARCH ORGANISATION

The activities of ISRO are carried out by the Vikram Sarabhai Space Centre (VSSC) at Trivandrum, the ISRO Satellite Centre (ISAC) at Bangalore, the Auxiliary Propulsion System Unit (APSU) at Bangalore and Trivandrum, the SHAR Centre at Sriharikota, Andhra Pradesh, the Space Applications Centre (SAC), Ahmadabad; and the recently established Developmental and Educational Communication Unit (DECU) also at Ahmadabad.

The Physical Research Laboratory (PRL) in Ahmadabad, an institution supported mainly by the DOS conducts research programmes in space and related sciences. The National Remote Sensing Agency (NRSA) at Hyderabad, an autonomous registered society, mainly supported by the DOS, utilises modern remote sensing techniques for supporting the survey, planning and management of the country's natural resources and provides operational support to various users.

Vikram Sarabhai Space Centre

Vikram Sarabhai Space Centre (VSSC), named after Dr. Vikram A. Sarabhai (1919-71) the founder of the Indian space programme encompasses all aspects of work related to the development of sounding rockets and satellite launch vehicles, scientific and technological payloads, ground-based and vehicle-borne instrumentation and production facilities for propellants and rocket hardware. VSSC is responsible for building and launching the Rohini series of sounding rockets for meteorological and scientific investigations of the upper atmosphere. India's first satellite launch vehicle, SLV-3, successfully launched on 18 July 1980 from ISRO's SHAR Centre at Sriharikota was developed at this Centre. This four stage solid propellant rocket has placed 35-kg indigenous Rohini Satellites into a near-earth orbit.

The first developmental flight of SLV-3 took place on 30 May 1981 from the SHAR range. It placed a 38-kg Rohini (RS-D-1) satellite into a near-earth orbit, though into one lower than expected. The fundamental objective of this flight was to evaluate the vehicle performance for future operational flights. The satellite carried a land-marker sensor payload. Though expected to last for 90 days, the mission came to a premature end after 9 days with the satellite re-entering the atmosphere due to the under performance of the vehicle.

SLV-3-D-2 was successfully launched on 17 April 1983 from SHAR. It placed the 41-kg RS-D-2 satellite in near-earth orbit.

In an effort to develop a reliable launch vehicle capable of placing 150-kg class of satellites in a low-earth orbit with a minimum life time of 100 days, the Augmented Satellite Launch Vehicle (ASLV) is taking shape. A Polar Satellite Launch Vehicle (PSLV) for putting 1,000-kg class satellites into sun-synchronous orbits is another project under execution. Two new facilities, one at Valiamala near Trivandrum and the other at Mahendragiri near Nagercoil (Tamil Nadu), are being set up under VSSC as part of the PSLV project.

The Space Science and Technology Centre of VSSC is the main research and development laboratory. Solid propellant for the rockets is produced at the Rocket Propellant Plant while some items of hardware are made at the Rocket Fabrication Facility. The Propellant Fuel Complex produces special materials required for the production of propellants. Liquid propellants for rockets have also been developed on a laboratory scale. An experimental plant for the production of ammonium perchlorate, used as oxidiser in solid propellants, has been set up at Alwaye, Kerala.

VSSC operates and maintains the Thumba Equatorial Rocket Launching Station (TERLS), which has been recognised by the United Nations Organisation as an international facility for sounding rocket experiments to investigate problems of meteorology and Ionosphere over the geomagnetic equator running close to Thumba and for other experiments. Since November 1963, when the range became operational nearly 1,500 sounding rockets of different makes have been launched for meteorological, ionospheric, aeronomic and astronomical studies. Scientists from Bulgaria, France, West Germany, Japan, UK, USA and USSR have participated in co-operation with their Indian counterparts, in many of these experiments.

ISRO Satellite Centre

ISRO Satellite Centre (ISAC) is responsible for the design, fabrication and integration of spacecraft and the development of satellite technology. The first Indian satellite, Aryabhata, was designed and fabricated at this Centre. This 360-kg satellite was launched on 19 April 1975 into a near-circular orbit of 600 km at an inclination of 51° to the equator from a Soviet Cosmodrome, using a Soviet Intercosmos rocket. The spin-stabilised satellite survived in orbit well beyond the design life-time of six months. All the technological systems on board the satellite have functioned well.

With the launching of Aryabhata, India acquired indigenous capability in satellite technology, namely, to design and fabricate a space-worthy system and evaluate its performance in orbit, evolve the methodology of conducting a series of complex operations on the satellite and set up the necessary receiving, transmitting and tracking systems, besides the establishment of the infrastructure for fabrication of satellite systems.

The second Indian satellite, Bhaskara-1 was launched on 7 June 1979 from a Soviet Cosmodrome for earth observations. The 444-kg experimental satellite was designed and built by ISRO. It contained sophisticated instruments for carrying out remote sensing experiments over India, using TV cameras and microwave radio meters. Bhaskara experiments were useful in the fields of forestry, hydrology, snow-cover and snow-melt, geology, soils, land use and ocean surface studies.

An improved version of Bhaskara satellite, named Bhaskara-II, with a wider scanning range, was launched on 20 November 1981 from the Soviet Union using a Soviet vehicle. The 436-kg satellite was spin-stabilised. It carried, as principal payloads, two television cameras and a three-frequency microwave radiometer system. The TV camera data was utilised for studies in hydrology, forestry and geology, while the radiometer data aided the monitoring of ocean surface state.

Rohini Satellite (RS-1), developed at ISAC, was the first Indian satellite to be launched from India using the indigenous SLV-3 vehicle. Two other satellites of Rohini series (RS-D-1 and RS-D-2) with earth observation sensors were also launched by SLV-3. A new series of Rohini satellites *viz.* Stretched Rohini Satellite Series (SROSS) covering selected scientific and application payloads fo launch by the ASLV are under development at the Centre.

India's first experimental three-axis-stabilised geostationary communication satellite APPLE (Ariane Passenger Payload Experiment), built at ISAC, was successfully orbited on 19 June 1981 by ESA's (European Space Agency), Ariane launcher from Kourou in French Guyana on its third developmental flight. From an initial transfe orbit, APPLE was placed in a 24-hour geostationary orbit over 102° east on 16 July 1981. All the systems on board of 670-kg spacecraft designed for conducting communication experiments in C-band functioned normally except that one of the two solar panels could not be deployed in orbit. APPLE has enhanced India's technologica capability in building a three-axis-stabilised geostationary communication satellite. It was used for conducting experiments in communication technology and for domestic communication, radio-networking data relay, remote area communication, etc., on an experimenta basis. While the communication payloads of the satellite were buil at Space Applications Centre, important sub-systems like Apoge Boost Motor and secondary propulsion systems were built at VSSC After the completion of the mission the satellite was switched of at the end of its two year prescribed life-time.

Space-based remote sensing of natural resources being one of th major goals of ISRO, efforts are underway to develop a 1,000 kg-clas semi-operational Indian Remote Sensing Satellite (IRS) series. Th first in the series, IRS-1A, will be launched by a Soviet launch vehicl during 1986.

Auxiliary Propulsion System Unit

Auxiliary Propulsion System Unit (APSU) at Bangalore and Trivan drum has the primary responsibility for designing, developing an supplying the propulsion control packages for launch vehicles and for satellites. The unit has precision and special fabrication, integration and test facilities for the fabrication, integration and qualification of propulsion control systems. Space-qualified pressure transducers are also produced in APSU. The work related to launch vehicle propulsion control is carried out in Trivandrum while the activities in spacecraft propulsion and pressure transducer production are done in Bangalore.

SHAR Centre

The SHAR Centre in Sriharikota Island, in Andhra Pradesh, is being developed as a range for launching bigger satellite launch vehicles, like ASLV and PSLV. India's first satellite launch vehicle, SLV-3 was launched from here.

A comprehensive test facility for conducting various ground tests for rocket motors and sub-systems has been set up at Sriharikota. This test facility is being augmented for the PSLV programme.

The ISRO Telemetry, Tracking and Command Network (ISTRAC), which has been set up to manage the telemetry and telecommand network of ISRO, has supported all ISRO missions such as Aryabhata, Bhaskara, RS-1 and APPLE with its network stations at SHAR Centre, Ahmadabad, Car Nicobar and Trivandrum.

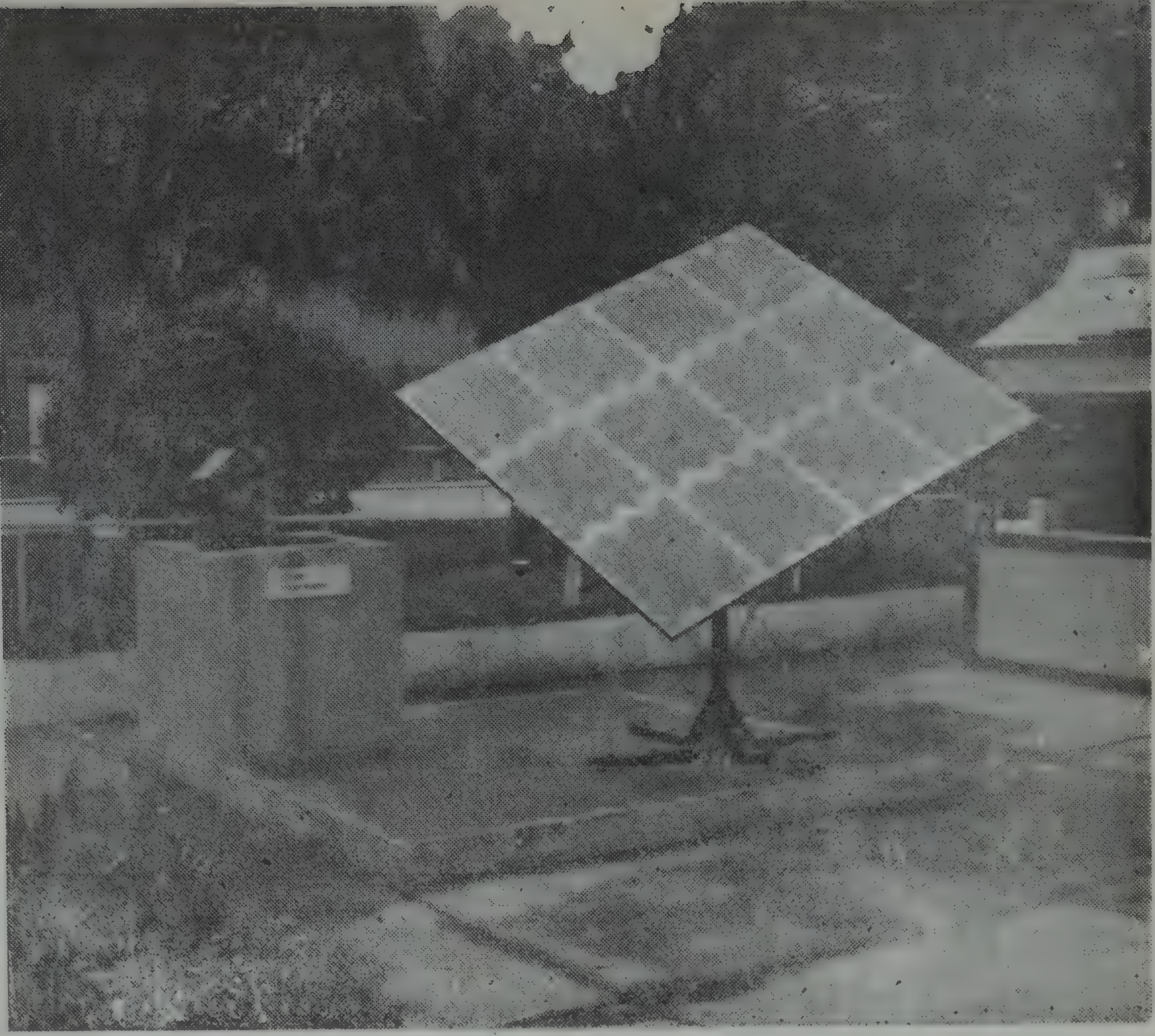
Space Applications Centre

Space Applications Centre (SAC) is engaged in the planning and execution of the space application projects of ISRO. Its objective is to apply space science and technology to practical uses. To achieve this goal, SAC has taken up work in telecommunications and television broadcasting and reception *via* satellites; use of remote sensing techniques to survey natural and renewable earth resources; studies in space meteorology and satellite geodesy.

The Centre conducted the Satellite Instructional Television Experiment (SITE), the year-long (August 1975 to July 1976) experiment in direct broadcast of television programmes *via* the National Aeronautics and Space Administration (NASA) satellite, ATS-6. During the experiment, community TV sets were installed in 2,400 villages in Rajasthan, Bihar, Orissa, Madhya Pradesh, Karnataka and Andhra Pradesh and instructional programmes were beamed directly *via* the satellite.

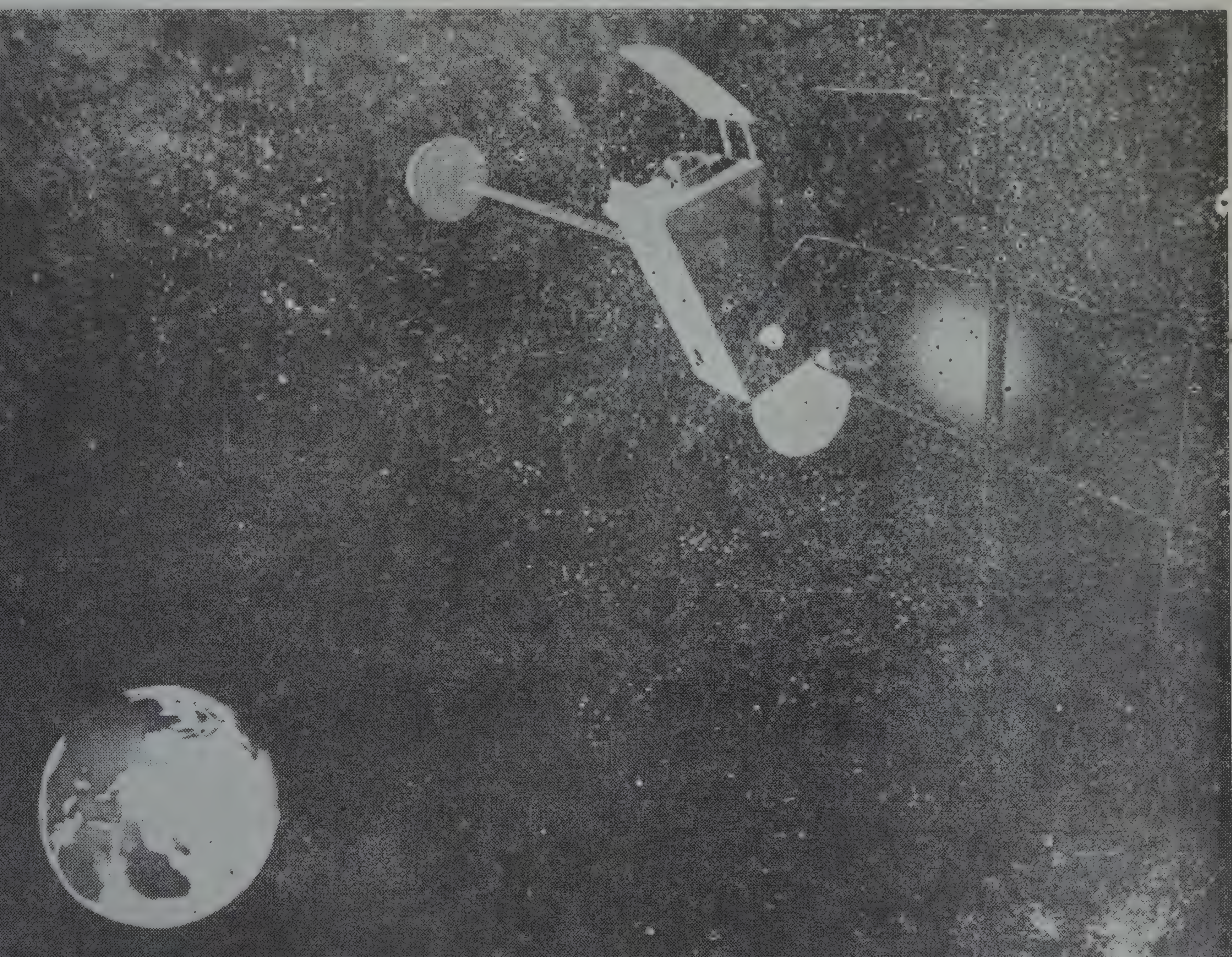
Under an agreement between ISRO and the Symphonie organisation, one of the two transponders aboard the Franco-West German Symphonie satellite was made available for Indian experiments in satellite telecommunications for two years beginning from June 1977. Known as the Satellite Telecommunications Experiments Project (STEP), this two-year project was taken up by ISRO in collaboration with the Posts and Telegraphs Department. Under STEP, experiments in remote area communications using transporatable terminals, radio-networking, emergency communications, digital communications, multiple access, integration of satellite circuits into terrestrial network and multiple audio-video transmission were conducted. The project was mainly aimed at providing a system test of geo-synchronous communication satellite and to sharpen India's expertise in the design, development, fabrication and operation of communication systems involving geo-stationary satellite.

The ground network for STEP consisted of the earth stations at Ahmadabad, Delhi and Madras, Transportable Remote Area Com-



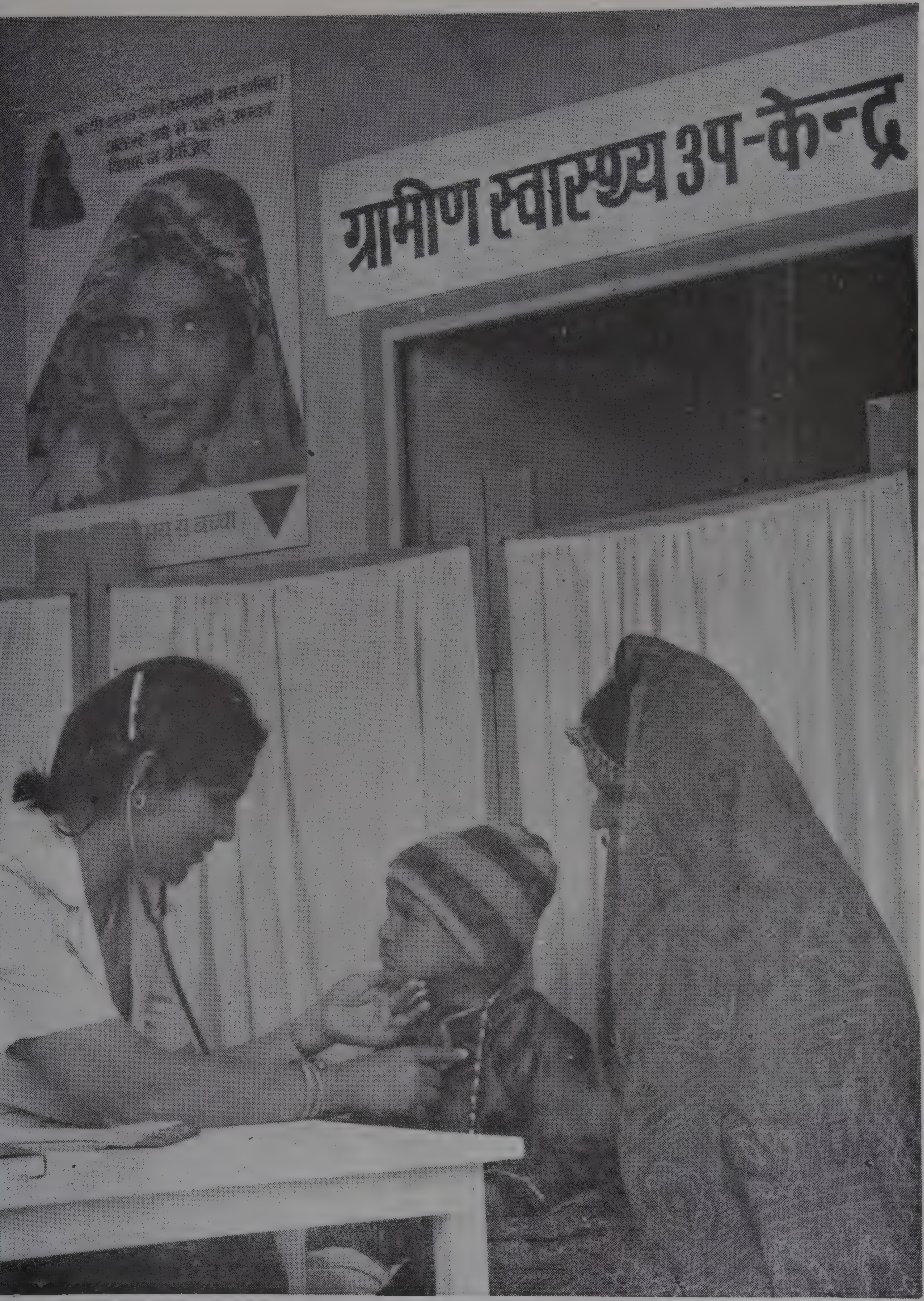
Water pump is eing energised by solar power for rinking water and micro irrigation in rural areas.

NSAT-IB, the second national satellite symbolises India's steady rogress in space technology.



Emblem of Indo-Soviet Joint Space Flight.

India's permanent station at Antarctica. It is a two-storey building centrally heated and capable of housing nearly 15 persons. The country has so far launched three expeditions to the icy continent.



*ner and child care services are made available
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munication Terminal (TRACT) and the Emergency Communication Terminal (ECT).

One important area of SAC activity is the remote sensing of natural and renewable resources. ISRO and the Indian Council of Agricultural Research conducted, during 1974-75, a joint experiment called the Agricultural Resources Inventory and Survey Experiment (ARISE), employing remote sensing techniques to assess crops and land-use pattern in Anantapur district of Andhra Pradesh and Patiala district of Punjab.

The remote sensing techniques are being applied for a wide range of purposes, such as collection of data relating to agriculture, detection of minerals, management of water resources, forest inventories and meteorological studies. SAC is developing sensors for use from balloons, aircraft and spacecraft to collect data for these applications. Some of these sensors are : infra-red scanner, multispectral scanner, microwave radiometer, vidicon TV camera and linear imaging scanning sensor.

Many remote sensing experiments have so far been conducted to study aspects of agriculture and landscape features over sites in Pune, Bombay, Sriharikota Island, Jaipur, Bangalore and the districts of Anantapur, Patiala and Panchmahals.

As a part of its earth observation programme SAC also conducts research in satellite meteorology using data from Bhaskara and USA's meteorological satellites.

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ISRO has been undertaking substantial research and development work in the area of communications "software" such as production of television programmes, communications research, studies on society-technology interaction, etc., ever since the SITE project carried out during the 70s. Considering the national relevance of such research and development work and the need for evolving quality educational TV programmes for national development, a Development and Educational Communication Unit (DECU) has been set up recently at Ahmedabad under ISRO/DOS.

The important activities of DECU are to : (i) produce developmental, educational and experimental programmes for transmission and also for various non-broadcast purposes including programmes [illegible] and for ISRO|DOS; (ii) maintain and operate the programme production facilities located at SAC campus and to plan and execute augmentation as approved and funded; (iii) develop and adapt hardware required for TV programme production; (iv) produce appropriate support material for the TV programmes and to catalyse "utilisation" activities in order to maximise the impact of TV programmes; (v) provide training, guidance, help and consultancy services within the country and outside in the related fields and (vi) participate in studies on communication planning, future technologies and options, etc., especially with regard to the role of satellites in communication and broadcasting; studies on the social, economic and organisational aspects of present and future space applications; and in the conception, planning and execution of specific new applications of space technology in the areas of communications and broadcasting and evaluation of the social, cultural and economic impact.

ysical Research,
aboratory

The Physical Research Laboratory (PRL) at Ahmadabad conducts basic research in space sciences for understanding the structure and

dynamics of the earth's upper atmosphere, the solar-terrestrial rel
tionship, astrophysical problems, etc. Investigations in the area a
being conducted at the Udaipur Solar Observatory.

National Remote Sensing Agency

The National Remote Sensing Agency (NRSA) carries out surveys
various natural resources, using remote sensing techniques. Satell
imagery, multi-spectral scanner data from aerial flying and aer
photography are made use of for such surveys. The NRSA hea
quarters, laboratory and the Research Flight Facility with four a
craft (for high, medium and low altitude flying), fitted with vario
sensors of NRSA are located at Hyderabad.

NRSA has set up an earth station at Shadnagar near Hyderab
for receiving data from USA's remote sensing satellites, Landsat a
meteorological satellites of NOAA series. The data thus receiv
are being processed and disseminated among several users with
and outside India.

NRSA's Indian Institute of Remote Sensing (IIRS) is located
Dehra Dun, which trains officers and scientists from the user agenc
in applying remote sensing techniques.

SPONSORED RESEARCH

Various universities and academic institutions in the country a
identified and encouraged by ISRO to undertake research and dev
lopment studies in space science, space technology and space applic
tions relevant to the Indian Space Programme.

Monsoon Experiment

ISRO participated in the Monsoon Experiment (MONEX) conduct
during 1979. A regional component of an international study cal
Global Atmospheric Research Programme (GARP), MONEX w
conducted jointly by the World Meteorological Organisation and t
International Council of Scientific Unions. The India Meteorologic
Department was the main executing agency of this project in Ind
ISRO's contribution to the project comprised collection of wind da
using rockets and meteorological data collected by using ome
sondes. The Balasore Rocket Launching Station was set up by ISR
during MONEX to launch rockets for meteorological observatio

Indian Middle Atmosphere Experiment

The Indian Middle Atmosphere Programme (IMAP) is a nation-wi
co-operative effort of many scientific departments and organisatio
to investigate the physical and chemical phenomena and process
taking place in the atmosphere between 10-100km.

Indian National Satellite

The Department of Space, in close co-operation with the Ministr
of Communications, Tourism and Civil Aviation and Information a
Broadcasting, has taken up the establishment of the Indian Natio
Satellite (INSAT) system. The INSAT-1 system is an operatio
space system providing telecommunications, meteorology and te
vision services from two identical multipurpose satellites in geos
tionary orbit. The proposed system envisages a very significant te
communications component providing for long distance telepho
communication with remote areas and islands and emergency co
munications. The meteorological capability includes 24-hour obser
tion of weather system, data collection and relay from rem
unattended platforms and disaster warning. Television capabi
relates both to direct TV broadcasting from satellite to commu
TV sets in rural areas and to TV networking. Also, radio network
via INSAT-1 is envisaged.

The INSAT system is slated to have an initial space segment comprising two multipurpose satellites in geostationary orbit at 74°E and 94°E longitude positions. The INSAT-1A satellite was successfully launched on 10 April 1982 from Cape Canaveral, USA, and was positioned at 74°E longitude. Operational utilisation of the various service payloads on board INSAT-1A was being derived as planned, until the time when, following the loss of earth lock on 4 September 1982 due to an unexpected moon interference and subsequent total depletion of on-board propellants, INSAT-1A was deactivated on 6 September 1982.

INSAT-1B was launched on 30 August 1983 and became operational on 15 October 1983.

The INSAT-1 satellites are built by the Ford Aerospace and Communications Corporation to the specifications of the DOS. DOS has the responsibility for establishment and operation of the INSAT-1 Space Segment. The Posts and Telegraphs Department has the responsibility for establishment, operation and maintenance of the telecommunications utilisation ground segment of the system. The India Meteorological Department has the responsibility for establishment and operation of the meteorological ground segment and its utilisation. Doordarshan is charged with the responsibility of establishment and operation of direct TV broadcasting to augmented TV receivers in rural and remote areas, national networking of terrestrial TV transmitters, and TV distribution within India. All India Radio has the responsibility for establishment and operation of Radio Networking Services. Radio and TV networking using INSAT-1B has been done.

The telecommunications ground segment of INSAT-1 consists of five large earth stations, thirteen medium earth stations, ten remote area terminals and three road transportable|air liftable emergency communication terminals. C-band channels are used mainly for thick and thin route telephony, S-band channels for TV broadcast to community receivers and Radio Networking and Disaster Warning System service using low-level injected carriers. Unattended Data Collection Platforms relay meteorological and hydrological data *via* Data Relay Transponder to a central station. IMD has started using INSAT-1B to collect meteorological data.

The Master Control Facility for INSAT satellites is located in Hassan district of Karnataka. It consists of two fully redundant Satellite Control Earth Stations and a Satellite Control Centre. The launch and associated services for INSAT-1 system are obtained from NASA on a cost reimbursible basis as per agreement concluded in November 1980.

An order has been placed on FACC for procuring INSAT-1C which will be in-orbit spare for INSAT-1B, when launched. The launch is expected to take place in 1986.

Work is underway on definition of the second generation INSAT (INSAT-II) satellites for the 1990s, which are to be built in India and eventually to be launched by a future Indian geostationary launcher. The operational INSAT-II satellites required for replacement of INSAT-1B in late 1990|early 1991 time-frame and onward are to be preceded by INSAT-II Test (proto-INSAT) Satellites. The launch of the first INSAT-II (proto-INSAT) satellites is expected in 1988-89. Definition of the initial baseline of the INSAT-II functional requirements have been completed in close co-operation with the

INSAT user agencies. INSAT-II is addressing a several-fold increase in the 1990s in the telecommunications and TV capabilities requirements and qualitative enhancement of meteorological earth observation capability as compared to INSAT-I. The spacecraft configuration definition studies are underway by a team headed by a Study Director for INSAT-II Space-Segment definition and are supported by ISAC, SAC, VSSC and APSU. The INSAT-II Test Satellite project is expected to start during 1984-85.

Satellite Tracking and Ranging Station

The Satellite Tracking and Ranging Station (STARS), a part of ISTRAC, was set up in January 1977 at Kavalur in Tamil Nadu in collaboration with the USSR Academy of Sciences. In addition to the tracking cameras, there is also a ranging laser at the station. It is now possible to determine orbits of our own satellites accurately and the data collected is useful for geodetic purposes.

ELECTRONICS

A major change has taken place in electronics technology—with a distinct shift from analogue to digital technology. India too has been preparing itself to enter the digital phase to meet the challenge of 80s. The goal is to reach an annual electronics production level of Rs 10,000 crore by 1990, end year of the Seventh Plan period. A statement of measures to accelerate the development of electronics was laid on the table of the Parliament on 18 August 1983.

The country has embarked on a major programme for the manufacture of Electronic Switching Systems (ESS) with the establishment of two factories, each with a capacity of 5 lakh lines. It is essential to establish a base in the country for technology development in ESS in order to ensure that future systems developed in this area can be produced locally. The era of LSI/VLSI (Very Large Scale Integration) has also begun with the trial production by Semiconductor Complex Ltd. (SCL) of the pulse dialler chip in March 1984. The Company's outlay was increased to Rs 50 crore to ensure that it play a commensurate role to produce LSI/VLSI circuits, which are critical and are the basic building blocks of modern electronic systems. In the longer range perspective, the Task Force on LSI/VLSI has formulated as a goal, the need to achieve one-micron capability in research and development to enable fabrication of one million components on a chip by 1990.

One of the most significant programmes being launched is CLASS (Computer Literacy And Studies in Schools) which is essential for the country's future development. The knowledge and understanding and also the use of computers would be crucial if the country has to retain its place in the industrial hierarchy in the community of nations. School children need to be taught to understand and use computers to appreciate their potential and limitations. In pursuance of these objectives a pilot project has been formulated for 1984-85 which would introduce computers in 250 schools.

The launching of INDONET marks the beginning of commercia data communications in the country. This will be the first commercia network to provide computer services to a wide range of users. The network is expected to become operational by the end of the year.

ORGANISATION

The Government set up a separate Department of Electronics in 1970 The Electronics Commission came into being next year to formulate policies in the field of electronics for achieving an integrated and self-reliant base in the country. The Department of Electronics, being an executive arm of the Electronics Commission, has the responsibility for implementing the policies and decisions of the Commission by interacting with other ministries and departments and various organisations concerning the use of electronics. The Information, Planning and Analysis Group (IPAG) provides information and analytical support necessary for policy formulation and plays an important role in the perspective planning and retrospective appraisal of the various activities of the Department. The Data Bank and Information Division (DBID) of IPAG maintains basic data about the indigenous electronics industry in a computerised data bank. The growth of research and development in the electronics industry is guided by two advisory councils, namely, Technology Development Council (TDC) and National Radar Council (NRC). TDC has now become an accepted national forum for the overall research and development planning, group identification with projects formulation, implementation and their coordination. NRC is an inter-ministry forum for all matters concerning radars, navigational aids, sonars and underwater electronic systems, infra-red and laser based equipment and allied techniques and technologies.

Several ministries of the Government have major involvement in the electronics industry as users, producers and executors of research and development programmes. These include Ministries of Defence, Communications, Information and Broadcasting; the Departments of Space, Atomic Energy, Science and Technology: and various laboratories of the Council of Scientific and Industrial Research.

TECHNOLOGY DEVELOPMENT

To build up the technology capability and upgrading the same on the continuous basis, DOE has been sponsoring, technology development projects at academic institutions, national laboratories and production organisations. Overall research and development planning, group identification with project formulations, implementation and their co-ordination is done with the help of Technology Development Council (TDC) and its working groups. Since 1973, when the TDC was set up, 260 projects, spread over some 75 organisations, have been funded. Of these, about 125 projects have been completed. Similarly, since the inception of the NRC in 1975, fifty six projects have been funded.

A programme for development and engineering of digital electronic switching systems has been approved and an autonomous society for the purpose is in the process of being set up very soon.

National Centre for Software Development

The National Centre for Software Development and Computing Techniques (NCSDCT) was set up in 1974, as an autonomous agency, for advanced research and development in software technology, creating and operating advanced software development environments for use in its own research and development as well as for external users.

Society for Applied Microwave Electronics Engineering and Research

The Society for Applied Microwave Electronics Engineering and Research (SAMEER) is devoted to research, design, development and supply of special microwave products used for several critical applications in defence, space, atomic energy, communication, medicine, etc. The products chosen involve either advanced technology or serve import substitution objectives in critical cases; or involve intensive research and development to meet the small volume high cost items which are not commercially feasible products for the industry to take up.

National Silicon Facility

Silicon is to electronics as steel is to an industrial economy. The Government has decided to set up a polysilicon plant of the National Silicon Facility (NSF) to produce ultrapure semiconductor grade silicon to meet the requirements of LSI/VLSI, as well as the Indian solar photovoltaic programme.

APPLICATIONS DEVELOPMENT

The major applications development activities include those under the National Informatics Centre (NIC); INDONET and INTERACT, the two major computer networks; Computer Aided Design (CAD) and Computer Aided Management (CAM).

National Informatics Centre

The primary objective of NIC is to provide computer based management information system services and related support facilities to the various ministries/departments and other offices of the Government. Towards this goal, a star-type computer network (NICNET) has been developed by NIC, linking up 16 minicomputers and 20 interactive terminals located in the various Government offices in Delhi.

NIC is now poised to enter the second phase of its operation, in which the NICNET will be extended to the various state capitals to enable centre-state exchange of information. To begin with, the areas to be covered will be agriculture, health and education.

INDONET

INDONET is an integrated information management and distributed data processing facility spanning the entire country. It is a step towards revolutionising data processing in India. Under this project, a computer network is being set up in Bombay, Delhi, Calcutta, Madras and Hyderabad.

INDONET will provide local computing facilities to small and medium scale sectors; highly specialised software in areas of engineering design; structural analysis and management sciences which professional organisations may share and sophisticated diversified systems for developing software for export. The project is being implemented by Computer Maintenance Corporation (CME).

INTERACT

INTERACT is a UNDP sponsored project to develop and transfer know-how in systems engineering of realtime/online computer based systems, on the basis of International Technical Co-operation among Developing Countries (ITCDC). CMC is the implementing agency.

CAD Project

The Computer Aided Design (CAD) project was initiated during 1981-82 with the assistance from Norwegian Aid Programme. A team of five Indian experts was trained in Norway on the usage of a powerful structural engineering software package SESAM. The package is now fully operational at the NIC Computer. Six organisations have started using the package for their design needs.

CAM Project

The CAM Project was launched in 1983 with UNDP assistance. The objective is to promote fuller utilisation of resources and manpower in the organised sectors of the economy through improvement in the standards of management techniques. Four national centres are being established for carrying out research, development and training in CAM applications and for co-ordinating CAM activities in specified areas, assigned to each centre. These centres will be at Indian Institute of Management, Ahmadabad, Bangalore and Calcutta and the Administrative Staff College of India, Hyderabad.

The Centres are expected to become operational next year.

Appropriate Automation Promotion Programme

The Appropriate Automation Promotion Programme (AAPP) aims at creating an awareness with regard to the benefits of automation and control in various industries in India and promote new technologies. Considering the diverse needs of the industry, regional centres for promoting appropriate automation technology have been established at Ahmedabad, Calcutta, Trivandrum and New Delhi.

Industrial Electronics Promotion Programme

Under the Industrial Electronics Promotion Programme (IEPP) promotion or appropriate automation techniques and new technologies such as application of microprocessors in various fields has been progressing. Four regional centres at New Delhi, Ahmedabad, Trivandrum and Calcutta have been established under the programme. They will concentrate on specific industrial sectors such as railways, steel, textiles, energy, chemicals, etc.

Manpower Development

A number of programmes of manpower development for the various facets of the electronics industry and research have been undertaken under the Technology Development Council and National Radar Council. The Department of Electronics is setting up a Northern Regional Centre for Electronics Design Technology (CEDT) at Srinagar on the same lines as at Bangalore,

PRODUCTION

The production of electronics during 1983 was worth Rs 1,360 crore compared to Rs 1,205 crore in 1982. The growth rate achieved during 1983 was 12.9 per cent.

The production of consumer electronics declined slightly from Rs 337 crore in 1982 to Rs 330 crore in 1983. The main reason for this decrease has been a fall in the production of radio receivers to a level of 60 lakh in 1983 from 70.9 lakh in 1982. The black and white TV receiver production increased from 5.7 lakh to 6.6 lakh units, and that of tape recorders from 7 lakh to 9 lakh units. This year, 50,000 colour TV sets were assembled in comparison to 70,000 sets in 1982 which was the year of the Asian Games.

A major thrust has been given to the development of colour television industry following Government's decision to provide 70 per cent population coverage in colour telecasting by the end of 1984. Consequently, 1984 will be the first year when indigenously produced colour TV sets would be introduced in the market. Similarly, major growth in the combination sets and other consumer products like electronic watches and calculators can be expected. Locally assembled digital electronic watches were introduced in the market during 1983.

Communications

A beginning has been made in the country for the introduction of digital technology in the field of communication. By 1990, 54 per cent of the local exchange lines will be of electronic type, 26 per cent of crossbar type and the rest of strowger and manual type. Also, by 1990, nearly 44 per cent of the transmission medium will be of digital type.

Steps have been taken by Indian Telephone Industries (ITI) to implement the project for the manufacture of 5 lakh lines per annum of Digital Electronic Switching Systems (ESS) at Gonda in Uttar Pradesh. The second ESS factory will be established at Bangalore and another for the manufacture of Digital TAX Equipment at Palghat.

To meet the shortfall in the availability of Electronic Rural Automatic Exchange (RAX), it has been decided to co-ordinate purchase of technology for transfer to ITI and four state sector companies. The licensed capacity of all six production units is to be increased to uniform level of 5 lakh instruments per year. This will lead to a capacity creation of 30 lakh telephones per year.

The Ministry of Information and Broadcasting has decided to instal 180 transmitters at the end of the Sixth Plan. It includes 133 Low Power Transmitters and 47 High Power Transmitters. These will extend TV coverage from 25 to 70 per cent of the population. The requirements for this special equipment have been ordered on indigenous manufacturers.

Computers

In the area of computers, the activities of DOE pertain to developmental, promotional and regulatory. These activities include computerisation of important sectors like defence, energy, railways, communication and education, building up of indigenous manufacture capability, monitoring of import of computer items and execution of plan projects.

About 140 units have been approved for the manufacture of minicomputer/microprocessor based systems out of which about 40 units are in production, having a turnover of about Rs 50 crore in 1983. Most of these units are presently catering to the commercial data processing segment and are producing accounting/invoicing systems, data entry systems, word processing systems, and scientific systems having limited capabilities. There is not much orientation of the industry towards specialised application areas, for which the country depends on imports.

On the medium range computer front, there are presently two units, Electronics Corporation of India (ECIL) and International Computer India Manufacture (ICIM) who are producing TDC 332 and ICL 2904 series of computers. These have limited capabilities in terms of hardware and software support.

In the area of computer peripherals, 13 units are in production, having a turnover value of about Rs 4.8 crore. These units are presently producing video display terminals, floppy drives and card readers.

Exports

The scheme for cent per cent export-oriented units, which can be set up in domestic tariff areas or in the export processing zones, has attracted a number of entrepreneurs, including non-resident Indians (NRIs).. So far, 50 proposals have been approved for setting up such units. About 10 of these have commenced production.

Twentyseven proposals have been approved for setting up of units in the Santa Cruz Electronics Export Processing Zone (SEEPZ) during 1983-84. Exports from SEEPZ are expected to be of the order of Rs 80 crore during 1983-84. Products manufactured and exported include floppy disc drives, semiconductors, computer peripherals, electronic motors, resistors, capacitors, computer software, magnetic recording heads and a number of other items.

FRASTRUC-
RE,
CILITIES
ID SERVICES

The Standardisation, Testing and Quality Control programme (STQC) aims at inculcating consciousness and emphasising the importance of quality and reliability of electronic items in industrial production. The programme is specifically oriented to assist small and medium scale industries to improve the quality and reliability of products upto acceptable standards by providing services in the area of calibration, testing and development.

Under this programme, a countrywide integrated network of testing and calibration facilities has been planned. It consists of Electronics Test and Development Centres (ETDCs) at the state level, and Electronics Regional Test Laboratories (ERTLs) at the regional level and an apex primary standards/calibration facility at the national level in National Physical Laboratory (NPL), New Delhi.

Fifteen ETDCs are working in states in collaboration with the concerned state governments. Three (ERTLs) one each at Delhi, Bombay and Calcutta have been established. The Controllerate of Inspection (CIL), Bangalore, under the Ministry of Defence, functions as ERTL for the southern region.

Test facilities to cater for CTV receivers are being created at four test laboratories. Training to teachers is being provided at four IIT's at Bombay, Delhi, Kanpur and Madras and the Jadavpur University.

To keep up the electronics engineers with the advances in electronics technology, the first Centre for Electronics Design and Technology (CEDT) was established in 1974 at the Indian Institute of Science, Bangalore.

omputer
aintenance
orporation

As a one-point computer support organisation in India, Computer Maintenance Corporation (CMC) was set up in 1975 as a public sector undertaking of the Department of Electronics. CMC through its three Centres, one each at Bombay, Delhi and Hyderabad provides a wide range of computer services. It has also been entrusted to implement some special projects of national importance, notably INDONET and INTERACT.

CMC's Research and Development Centre at Hyderabad is doing pioneering work in many fields. It has unified text processing in Indian scripts by switching from graphic keyboards to phonetic ones. CMC has developed IDEAS—an information, dissemination, editing and switching system—with archival facilities for news agencies. The IDEAS system is to be installed shortly in the office of PTI, a news agency. The Corporation has also developed special application packages for railway and power sectors. These include IMPRESS—an Integrated Multi-train Passenger Reservation System, TYMS—Total Yard Portable System and Energy Management System.

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orporation

The Electronics Trade and Technology Development Corporation was set up in 1974 for expanding foreign trade in electronics and undertaking development of technology in key areas, with particular emphasis on expanding exports.

The Corporation is engaged in providing consultancy services to entrepreneurs and industrial development corporations within the country and abroad.

SCIENTIFIC AND INDUSTRIAL RESEARCH

The Council of Scientific and Industrial Research (CSIR) constitute in 1942 by a resolution of the then Central Legislative Assembly, i an autonomous body registered under the Registration of Societie Act, 1860. With its network of national laboratories and extensio centres/field stations, it is the premier organisation for scientific an industrial research under state auspices and supports research i universities and other centres of learning. (For CSIR establishment see **General Information.**)

As on 1 April 1984, the CSIR was having 38 nationa laboratories/institutes all over the country. Besides, there wer 2 industrial research associations and 138 extension centres/fiel stations. These laboratories, associations and field stations/centre are being manned by 4,161 scientists and 10,511 scientific and technical staff. There are 16 research committees. About 539 researc schemes are in progress. The CSIR has services of 34 emeritu scientists and 430 pool scientists. More than 2,950 research fellow are also working.

The Scientists Pool introduced in 1958 is intended to provid temporary placement to well qualified Indian scientists, engineers an medical personnel from abroad, and later was extended to highl qualified Indian scientists. The CSIR also maintains a register o scientists and technical personnel in the country.

The Council has set up polytechnology transfer centres in state to extend technological assistance to industries, particularly in th medium and small scale sectors. It has a scheme to facilitate CSI scientists, technologists and engineers to set up industries based o CSIR know-how.

The Council instituted a prize in 1957 in the memory of it founder Director, Dr. Shanti Swarup Bhatnagar (1894-1955). Th award is made each year for outstanding contribution in Scienc including engineering and technology. Five or more prizes, each o the value of Rs 20,000 are usually awarded annually in Physica Sciences, Chemical Sciences, Biological Sciences, Medical Science and other Sciences.

CSIR has been assigned, and over the past, taken on, a broa range of activities relevant to national development. The primar objective of CSIR is to establish a base of scientific capability an excellence, over a wide spectrum of science and technology to enabl it to carry out research of value for the development of industrie as well as other sectors of economy. Having established such a bas to a significant extent, CSIR has used it to provide nationa standards, testing facilities, consultancy services, and the undertakin of sponsored research, publication of papers, monographs, technica and feasibility reports, carrying out evaluation studies and offerin advice to Government and industry, popularization of science an publication of scientific journals, support for the promotion of scientific research in the form of award of fellowships, operation o Scientists' Pool, support to seminars and conferences, providin technical assistance of other developing countries, apart from generation of know-how which is made available for commercial exploitatio and often patented.

One of the earliest successes achieved by CSIR was the introduction of know-how for the manufacture of baby food from buffal milk. The significant feature of this achievement (by CFTRI, Mysore) was that India was able to produce and market baby food from buffalo milk at a time when the advanced countries had made it known that infant food could be made only from cow's milk, India's main source of milk being buffaloes.

CSIR played an important role in indigenising the TV industry. Know-how for the manufacture of TV sets was given to India for the first time by CEERI, Pilani.

CSIR, through its laboratory, National Institute of Oceanography (NIO) in Goa played a key-role in organizing the first Indian expedition to Antarctica in 1981-82. It continued to be associated with the second and third Indian expeditions to Antarctica. The Central Building Research Institute designed and fabricated permanent type of shelters to accommodate the members of the second expedition to Antarctica.

In January 1981, NIO achieved a notable success in deep sea exploratory mining. Polymetallic nodules were recovered for the first time. Techniques for the winning of metals like copper, nickel and manganese from these nodules are also being expeditiously developed.

The Central Institute of Medicinal & Aromatic Plants, Lucknow has demonstrated the use of modern technology for better yield of rose oil. This has helped revive on old industry. The Regional Research Laboratory, Jorhat has developed process know-how and design package for production of tartaric acid from tamarind leaves. The National Metallurgical Laboratory, Jamshedpur has designed and demonstrated the use of a special cupola for use by foundries and rerolling mills at Agra so that pollution is brought down. The Central Building Research Institute, Roorkee has developed a process for manufacture of building bricks from plastic black and red soils. The Central Mechanical Engineering Research Institute, Durgapur has developed a device for removing illegally parked vehicles for the use of the Police Department.

ENVIRONMENT

The Department of Environment was set up on 1 November 1980 to serve as the focal point in administrative structure of the Government for planning, promotion and co-ordination of environmental programmes.

The Botanical Survey of India (BSI) and Zoological Survey of India (ZSI) are the two major agencies of the Department for investigations on natural living resources. The National Museum of Natural History (NMNH), New Delhi helps in mass education and awareness on environmental issues. The executive responsibilities for enforcement of the Acts on prevention and control of water and air pollution as also in respect of the Water Cess Act are carried out by the Central Board for the Prevention and Control of Water Pollution (CBPCWP), is a statutory authority attached to this Department with effect from January 1982. Since September 1982 the function of Wildlife management has been transferred to the Department from the Ministry of Agriculture.

Promotion of Research

Promotion of research on subjects related to environment and building up of research and development facilities and infrastructure in the country form one of the major activities of the Department of

Environment. For this purpose, the Department has constituted the Indian National Man and the Biosphere Committee (MAB) and the Environment Research Committee (ERC). The MAB and the ERC make recommendations on priority areas for environmental research besides scrutinising research proposals.

Action oriented integrated eco-development research projects in the Himalayan region, Ganga basin and Western Ghats have been undertaken during 1983-84. All India Co-ordinated Research Projects in heavy metals, seed biology, tissue culture, ethnobiology and effect of air pollution on plants, are also important components of the research programme of the Department.

As part of its programme to create a strong research base and training support, the Department has taken steps to set up a number of centres of excellence. One such centre for ecological research and training with particular reference to the problems of the Western Ghats region has been set up at the Indian Institute of Science, Bangalore. A centre on environmental education is being set up at the Nehru Foundation of Development, Ahmadabad. Proposals have been formulated for establishment of similar centres on mining, mangrove ecology, genetic toxicology and ornithology. The Department is also in the process of setting up of an Institute on Himalayan Environment and Development.

Environmental Impact Assessment

Environmental appraisal is an important responsibility assigned to the Department of Environment. This function involves evaluation of environmental implications and incorporation of necessary safeguards for such activities having a bearing on environmental quality. Questionnaires for eliciting information on environmental aspects of development projects in selected sectors such as industry, multipurpose river valley schemes, thermal power generation, shipping and harbours, and mining have been prepared by the Department. The project authorities are required to incorporate a chapter on environmental aspects in their feasibility reports. The Department offers its views on the environmental aspects which lead to policy decisions regarding site selection and incorporation of environmental safeguards during execution of the projects.

Education, Training and Awareness

Promotion of environmental education, training and awareness at various levels is the essential pre-requisite for environmental management. To this end, the Department has initiated several activities addressed to specific target groups such as decision makers, planners, administrators, executives, students and people in general. Particular emphasis of this programme has been on nonformal education through seminars, workshops, refresher courses, group discussions, popular lectures, multi-media campaigns, posters and essay competitions, etc.

Various activities for nation-wide celebration of the World Environment Day and the Wildlife Week are co-ordinated by the Department.

To cater to the felt needs for creating a cadre of environmental managers, it is proposed to set up a National Institute of Environmental Management (NIEM).

Information

The scheme for setting up of the Environmental Information System (ENVIS) with a national network of Distributed Information Centres (DIC) and a focal point in the Department of Environment was approved in the Sixth Plan period. It has become operational through the installation of a Computer Terminal linked with the computer system of the National Informatics Centre (NIC) to serve as the focal point facility for storage, retrieval and dissemination of information to the users.

The ENVIS is a network with its focal point in the Department of Environment supported by a chain of DICs in selected subject areas in specific bio-geographic regions. So far, 5 such DICs have been set up.

As the national focal point (NFP) of INFOTERRA (International Referral System for Sources of Information on Environment), the Department responded to a number of queries from users within the country and abroad. In collaboration with the Central Statistical Organisation (CSO), a beginning has been made for evolving a system of collection, collation and updating of environmental statistics.

Eco-Development

The Department carried out a number of projects under its eco-development programme. Universities in several states and seventeen voluntary agencies organised eco-development camps. Task forces of ex-service personnel for eco-developmental work in Shivaliks, (Uttar Pradesh) and Rajasthan canal have been raised. Field action projects have been taken up in selected areas such as Shivalik foothills (Hoshiarpur, Punjab), Auroville (Pondicherry) and Udaipur district.

Pollution Control

The Department has undertaken the preparation of comprehensive industry documents and phased implementation of industry-specific minimal national standards (MINAS); basin-wide survey for zoning and classification of rivers; setting up of regional organisations for co-ordination of pollution control activities; and building up technical and logistic support for air pollution control. Minimal national standards and programmes had been launched in respect of selected pollution industries including caustic soda, sugar, fermentation and oil refineries.

To provide the basis for a nation-wide water quality management programme, zoning and classification of 14 major inter-state rivers have been completed. Intensive basin-wide surveys were conducted in Ganga and Yamuna. A country-wide network of 120 stations has been established for water quality monitoring. In respect of air pollution control, intensive work has been undertaken for inventorisation of emission sources and designation of air pollution control areas, evolution of ambient air quality criteria and industry-specific emission standards. So far 15 states have notified the rules as needed for enforcement of the Air (Prevention and Control of Pollution) Act, 1981.

Conservation of Natural Living Resources

A major initiative has been taken towards formulating a national conservation strategy so as to clearly define the imperatives and actions for conservation oriented development programmes. In essence, the primary objective of the strategy will be to provide a framework of perspective planning for sustainable development.

To launch a concerted programme on wildlife conservation, the National Wildlife Action Plan was finalised and adopted during 1983-84. Establishment and management of a network of protected areas, rehabilitation of rare and endangered species, captive breeding, research and monitoring and promotional efforts for environmental awareness are the major components of the action plan.

International Co-operation

The Department of Environment functions as the nodal agency for United Nations Environment Programme (UNEP), the South Asia Co-operative Environment Programme (SACEP) and the International Union for Conservation of Nature and Natural Resources (IUCN). India has been actively participating in the various sessions of UNEP with a view to ensuring the programmes are more relevant to the developing countries and the resources are not frittered away on peripheral programmes.

India has a number of on-going bilateral programmes with both developed and developing countries.

Botanical Survey of India

The Botanical Survey of India (BSI) surveys, identifies and investigates on plant species. Survey of unexplored areas, intensification of the district flora programme, preparation of comprehensive documents on new flora of India and study of endemic and threatened plants are among the major programmes. It has also been involved in assessment of environmental impact of several developmental projects and inventorisation of plant resources in important ecosystems. These include the Silent Valley, Sutlej-Beas Link, Tehri Dam, Lalpur Dam, Idukki Valley, etc., and national parks, game-sanctuaries and areas to be designated as biosphere reserves.

Zoological Survey of India

The Zoological Survey of India (ZSI) carries out studies in diverse fields of animal taxonomy and investigations related to agriculture forestry, fisheries, public health and hygiene. Particular emphasis is given to the study of the bioecology of fauna with special reference to the interactions between animal and its environment. Faunistic surveys are regularly conducted in important ecosystems which include 54 estuarine and coastal areas mangroves, hilly tracts of Western Ghats and selected high altitude areas in the Himalayan region. During 1982-83, 318 research projects were taken up resulting in the publication of 264 papers including monographs and books. Over 17,593 identified specimens pertaining to 1983 species were collected through 78 faunistic surveys in various parts of the country. These included types of 156 specimens and 417 specimens as new to science and 39 species distributed over 320 specimens as new to National Zoological Collections.

To study the faunal components in developmental projects areas, environment monitoring wings have been established at Calcutta and Madras. These wings have rendered valuable assistance in supplying data for environmental impact assessment in ecology and wildlife. Besides studies on effects of pollution on the fauna, special studies were made in respect of some of the endangered and rare species such as the Indian wild ass, the great Indian bustard and desert cat in the arid zones and Phayre's leaf monkeys which are found only in Tripura. A Marine Aquarium and Research Centre on the eastern coast is being set up at Digha, West Bengal to initiate the new concept of educating the general public and school and college students about the marine forms.

In 1983 the Project Tiger completed a decade of sustained efforts for saving the tiger from extinction. With the addition of four new tiger reserves in 1982-83 the total area under the Project

(15 Tiger Reserve Areas) is now 24,712 sq km. Instead of being limited to a single species oriented activity, emphasis has been placed on conservation of the natural habitat of tiger along with associated animals and plants as well.

One of the important decisions taken during 1983-84 was with regard to management of biosphere reserves. It has been decided by the Government that the Department of Environment will be the nodal agency for the biosphere reserves programme. So far, 13 sites in different biogeographical regions have been identified for designation as biosphere reserves. Comprehensive project documents for four sites *viz.*, Nilgiri, Namdapha, Nanda Devi and Uttarakhand have been prepared.

OCEAN DEVELOPMENT

Although the oceans have supported a variety of activities of man since ancient times, it is only in the last two decades that they have come to be seen as inexhaustible source of many vital resources, living and non-living, for meeting human needs in the future. As land areas are gradually getting used up in the endless process of human settlement and industrialisation, the oceans have literally become the last frontier for man on earth. The establishment of a new Department of Ocean Development in July 1981 reflects the zeal and concern of the Government in tapping the ocean wealth for the betterment of the living conditions of the country.

The activities of the Department have been notified in 7 broad areas : These are : (i) Living, (ii) Non-living resources, (iii) Ship management, (iv) Manpower planning, (v) International collaboration and Antarctic programmes, (vi) Data collection and dissemination and (vii) Legal regime.

The Department had finalised the Ocean Policy Statement which has been discussed in both the Houses of Parliament.

Exclusive Economic Zone

Declaration of a 320 km Exclusive Economic Zone and a new regime of the sea under UN Conference on Law of the Sea (UNCLOS) has added new dimensions to the programme for development of the oceans. According to this regime, nearly 20 lakh sq km of area, approximating almost two thirds of the land mass, has come under India's national jurisdiction. In this area India has got exclusive right to utilise living and non-living resources of the sea. India has sovereign rights in the Exclusive Economic Zone for the purpose of exploration, exploitation, conservation and management of natural resources, both living and non-living, as well as for producing energy from the tides, waves and currents. India has exclusive jurisdiction to authorise, to regulate and control scientific research in this zone and also to preserve and protect marine environment and to prevent and control marine pollution.

Pioneer Investor

India has been recognised along with 3 other countries, namely, France, Japan and USSR as "pioneer investor" in a resolution passed in the Third Conference of UN on the Law of the Sea. Thus India is the only developing country which has been recognised as a pioneer investor.

Expedition to Antarctica

During 1983-84, the Department organised the third Indian scientific expedition consisting of 83 members including two women scientists to

Antarctica. After successfully carrying out its various objectives, including setting up a permanently manned station there, 69 members have since returned. The station is being manned by 12 persons which includes 3 scientists. These scientists will carry out research in the field of meteorology, glaciology and biology. Direct communication link has been established between India and Antarctica station through satellite.

The continent of Antarctica is unique in many respects. It influences the global atmosphere and, particularly, the weather of the Indian Ocean region. It has large deposits of ice, rocks and other minerals which are of great scientific value. The expeditions provide opportunities to study various sciences such as geology, geophysics, geomagnetism, glaciology and radio wave propagation of the region. The scientific studies in Antarctica will greatly help in understanding the resources of Antarctica, living and non-living, including those of the surrounding sea.

Research

The Department had purchased a highly sophisticated oceanographic research vessel, *sagar Kanya,* constructed at a West German Shipyard. The significant capability built into *Sagar Kanya* is for deep sea research and for the survey of polymetallic nodules in the Indian Ocean. *Sagar Kanya* can also be used for guiding and assisting further ocean mining vessels during pilot surveys or in their full scale operation.

Survey of Polymetalic Nodules

Extensive surveys for minerals in the continental shelf region have been carried out for which purpose, an Indian built research vessel *Gaveshani, Sagar Kanya* and two chartered ships *viz.* MV *Scandi Surveyor* and MV *Farnella* were made use of. The survey of the entire western continental shelf and one third of the eastern continental shelf has been completed. A comprehensive programme has been drawn up for the exploration of ocean wealth and within a few years the survey of the entire continental shelf will be completed. Research deposits of ilmenite containing appreciable quantities of titanium and minor amount of vanadium have been located in the offshore sediments of Ratnagiri. Several deposits of rutile, zircon, phosphorite and monazite with varying proportions of magnetite and garnet have also been identified in the seabed.

Extensive survey have also been carried on in Indian Ocean basin for polymetallic nodules which constitute a good source of manganese, iron, copper, nickel and cobalt. As a result of the survey done in the deep sea, it has been possible to locate suitable areas for seabed mining in the Central Indian Ocean with specific geographical co-ordinates. Accordingly, the Government has filed their application with the UN along with details of two plots each of approximately 1,50,000 sq km area and of more or less equal value. Out of two plots, the Preparatory Commission of the International Seabed Authority will retain one plot and allot the other to India.

DEPARTMENTAL RESEARCH

A number of other Government departments are responsible for certain branches of research. Some of them are:

Geology

The Geological Survey of India (GSI) with headquarters at Calcutta was established in 1851, largely for prospecting coal in the eastern

India. The work was diversified with time and was intensified after Independence to cater the growing need of industrialisation. Now the GSI is the principal agency entrusted with all the geological activities in the country. As per the charter formulated in 1973, the GSI is responsible for the preparation of the geological, geochemical and geophysical maps (ground and airborne) of the country, including the off-shore areas; for the exploration and assessment of mineral resources in the country; for conducting all studies pertaining to the geotechnical problems for rendering expert technical advice in connection with different engineering projects, and for carrying out environmental studies connected with the mining and urban development, land use, desert control, river and forest usage, etc. The Department is carrying out research, both fundamental and applied in all the branches of earth sciences *e.g.* in the field of mineralogy, geochronology, stratigraphy, paleontology and remote sensing, geochemistry, analytical chemistry and geophysics. It also carries out special investigations on geothermal, glaciology and deep geology. The results of the various activities, of the Department carried out by the different units under the six regional offices and four specialised wings, are collected, collated, processed, stored, maintained and disseminated through information processing units, data centres, publications and map productions. Training programme for developing the scientific man power resources have been given a high priority in the Department and the training and logistic assistance are extended to the personnel of the geological streams from the Department, other Indian organisations and the member countries of the ESCAP.

The systemetic geological mapping of the country and its continental shelf is basic to all other activities of the Department. The peninsular area, which is the main storehouse of mineral resources, has attracted the greatest attention. The mapping of the extra peninsular regions is generally undertaken on expedition basis. During 1982-83 (October 1982 to September 1983) GSI carried out systematic mapping in a total of 1,15,014 sq km area in different parts of the country. For mineral exploration, 1,43,311 metre of drilling was carried out and about 4,828 sq km of large scale mapping and 143 sq km of detailed mapping were done to delineate the potential mineralised zones. The Airborne Mineral Surveys & Exploration (AMSE) Wing of the Department in collaboration with National Remote Sensing Agency undertook 33,042 L km aero-magnetic surveys over Tamil Nadu. As a result of mineral exploration, an additonal reserve of 1,649 m tonnes of coal have been established in the coal fields of Madhya Pradesh, Bihar and West Bengal. Investigations for copper-lead-zinc were also carried out in Rajasthan, Orissa, West Bengal, Bihar, Maharashtra and Madhya Pradesh. Gold is being investigated vigorously in the southern part of Kolar schist belt and Hutti Muski belt, Karnataka. The high priority accorded to diamond investigation in the earlier years is being maintained in the exploration of diamond fields of Andhra Pradesh and Madhya Pradesh. The project ARBAKHI to search for mercury in Arnala area in Maharashtra and other areas are being continued.

The off-shore mineral exploration and marine geology got a tremendous fillip with the commissioning of GSI's research ship *Samudra Manthan* on 24 June 1983 when she made her maiden scientific cruise from Calcutta to Port Blair.

GSI undertook 380 geotechnical investigation, at the instance of various Central and state agencies on irrigation, hydroelectric and thermal power generation, microhydel schemes, bridges, railway alignments, etc.

GSI undertakes a number of research projects both in the fundamental and applied fields of various branches of earth sciences. About 141 research programmes are in hand. The main thrust of these activities is mainly to develop newer methods/techniques and refine existing methods to aid in mineral explorations. Many of these programmes are taken up in collaboration with universities, research centres in the country and abroad and some are sponsored by the Department of Science and Technology. In the realm of photogeology and remote sensing, GSI is collaborating with ISRO to develop and test the sensor system for geological remote sensing for the Indian satellite to be launched in 1985-86.

Meteorology

The India Meteorological Department, organised on an all India basis in 1875, is the national agency for providing service in the field of meteorology. Meteorological data are collected from over fourteen hundred observatories of different types and processed by the Department. The Department, along with the Indian Institute of Tropical Meteorology (IITM), Pune, conducts fundamental and applied research in different fields of meteorology, weather forecasting, meteorological instrumentation, radar meteorology, seismology, agricultural meteorology, hydrometeorology, satellite meteorology and air pollution. The IITM has been conducting cloud seeding experiments for producing rain artificially.

The Indian Institute of Astrophysics (IIA), Bangalore, the Indian Institute of Geomagnetism (IIG), Bombay, and the IITM, Pune, which were formerly a part of the India Meteorological Department, have been functioning as autonomous institutes since 1971. The IIA conducts research in solar and stellar physics, radio astronomy, cosmic radiation, etc. The IIG records magnetic observations and conducts research in geomagnetism.

Meteorological research is conducted at some universities and institutes, notably, the Andhra University, the Banaras Hindu University and the Cochin University and the Indian Institute of Technology, New Delhi and Kanpur, and the Indian Institute of Sciences, Bangalore.

INSAT Programme

The Indian National Satellite (INSAT-IB) was successfully launched on 30 August 1983 and the Main Data Utilization Centre at Delhi was geared up to make use of its products. Since 3 October 1983 the cloud imagery data transmitted by INSAT-IB are being received, processed and made use of for weather forecasting, particularly for prediction of formation and movement of cyclonic storms and issue of necessary warnings. There has been improvement in the warning services provided by the Department against tropical cyclones and other natural hazards with the use of INSAT pictures.

Broadcasting

The Research Department of the All India Radio is a service oriented Department and caters to the needs of both All India Radio and Doordarshan network. The basic activities are : (i) to undertake studies and investigations, and developmental work in the field of TV and sound broadcasting, (ii) to provide technical services to the operation of Akashvani and Doordarshan network, (iii) to design, develop and fabricate prototype models of various broadcast equipment for field trials in the networks and know-how transfer to the indigenous industry for large quantity production, and (iv) to participate and offer expert advice on behalf of AIR and Doordarshan in national and international committees.

The main functions of the Department are carried out by several sections, *viz.* frequency planning and propagation; acoustics and audio engineering; research and development of equipment and prototype cum production unit.

The propagation section deals with the problems of radiowave propagation from low frequency to very high frequency/ultra high frequency including satellite broadcasting and also planning of frequency schedule of internal and external services of AIR. The International Monitoring and Receiving Centre, Todapur, New Delhi attached to the Department serves as a field research centre and supplements practical data needed for propagation studies and frequency planning of AIR services.

The research and development section works on the development of various equipment needed for the networks which are based on new concepts, modifications of the existing equipment or indigenous development encouraging import substitution.

With the rapid expansion of TV network in the country a large number of low power TV transmitters (Band III) are coming up in different parts of the country. A low power, Band III TV transmitting antenna suitable for use with 1 kw TV transmitter has been designed and developed indigenously. A total of 8 such antennae have so far been fabricated and supplied to low power Doordarshan Kendras at Nagpur, Goa, Trivandrum, Vijaywada, Ahmadabad, Allahabad, Gwalior and Asansol. These Kendras have been inaugurated.

The prototype and production unit undertakes production of some specialised types of equipment developed by the research and development unit, which are required in limited quantities. The technical know-how of equipments which are required in quantity or whose commercial production is economical are transferred to outside manufacturers through National Research Development Corporation.

Hydraulic and Power Research

The Central Water and Power Research Station, Pune (estd. in 1916) is the premier hydraulic research institution in India and recognised as the regional laboratory of the United Nations Economic and Social Commission for Asia and Pacific (ESCAP) in the area of waterways and water-borne transport. It is responsible for conducting research in the field of river engineering, reservoir and appurtenant structures coastal and offshore engineering, ship hydrodynamics, hydraulic machinery, stratified flows foundations and structures geotechniques earthquake engineering, mathematical modelling and instrumentation.

The Central Soil and Materials Research Station, New Delhi, (estd. in 1954) is conducting basic and applied research in geo-mechanics and construction materials, soil mechanics and foundation engineering and concrete technology and chemistry and sediment.

The National Institute of Hydrology, Roorkee was set up in 1978 as an autonomous society. It is a premier national research organisation entrusted with carrying out systematic scientific research activities in basic, theoretical and applied hydrology.

The Central Board of Irrigation and Power, New Delhi works for the promotion and co-ordination of research work in the field of irrigation and power engineering and dissemination of knowledge gained through researches.

Railways

The Research, Designs and Standards Organisation (RDSO), under the Ministry of Railways was created in 1957 by merging the Central Standards Office (CSO) and the Railways Testing and Research Centre (RTRC), Lucknow. The RDSO has now grown up into a fully equipped research organisation of the Indian railways having experts from all the disciplines of the railways.

Fibre Technology

The co-operative research associations in the textile sector constitute an important segment of activities relating to research and development in the fibre technology. These are : the Ahmadabad Textile Industries Research Association, Ahmadabad (estd. 1949); the Bombay Textile Research Association, Bombay (estd. 1954); the South India Textile Research Association, Coimbatore (estd. 1951) the Silk and Art Silk Mill Research Association, Bombay (estd. 1950); the Indian Jute Industries Research Association, Calcutta (registered in 1966); the Wool Research Association, Bombay (estd. 1963); the Northern India Textile Research Association, Ghaziabad (estd. 1974) and the Man-made Textile Research Association, Surat (recognised as an independent body in 1980-81).

Telecommunications

The Telecommunication Research Centre (TRC) is the research and development organisation of the telecommunication wing of P&T Department. Set up in 1956, TRC has progressively grown into a large organisation dedicated to the work of telecommunication development. TRC, amongst other activities is assessing the future needs of telecommunication network in the introduction of appropriate new technology and also undertakes development of designs for indigenous fabrication of new systems. TRC co-ordinates with and assists manufacturing agencies in the country to meet P&T systems requirements. Some of the major achievements of TRC during the recent years is on the successful completion of an extensive network of earth stations for satellite communication with system engineering by the engineers of the P&T Department and also in the introduction of digital transmission network through radio links and modern means of transmission media such as optical fibre communication links. TRC has played a key role in deciding on the technologies adaptable under Indian conditions for extension of telecommunication services to rural areas.

TRC has been actively engaged in the development of equipment and telecommunication systems using digital technology. Equipment incorporating latest technologies in pulse code modulation (PCM) technique and large capacity transmission media such as digital radio and optical fibre communication system have been developed by extensive studies conducted in recent years. TRC has drawn up extensive plans for introduction of this technology in country's telecommunication network.

TRC has been engaged in development of small capacity electronic exchanges especially for rural applications. An exchange giving facility of direct dialling by subscribers into national telecom network has now been developed.

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8 HEALTH

The Constitution lays down that "the State shall regard the raising of the level of nutrition and the standard of living of its people and the improvement of public health as among its primary duties". To give effect to this directive, health has been given due priority.

Public health is primarily the responsibility of the state governments. The Central Government, however, guides, sponsors and supports major schemes for improving the health of the people. The Ministry of Health and Family Welfare co-ordinates the work of the state governments. The Central Council of Health advises the Ministry on its policies and programmes.

Health Plans

The primary objective in the health sector during the Sixth Plan is to provide better primary health care and medical care services to rural areas, tribal areas and poor people, with the underlying philosophy that "the needs of many people should prevail over those of a few". The driving force behind the health planning is the commitment of the nation to achieve the goal of "Health for all by 2000 AD" as envisaged in the National Health Policy approved by the Parliament in 1983. The Revised 20-Point Programme pinpoints special thrust on improving the health status of the people. According to the programme, it is proposed to promote family planning on a voluntary basis as a people's movement, substantially augment universal primary health facilities and control leprosy, tuberculosis and blindness, accelerate programme of welfare for women and children and nutrition programme for pregnant women, nursing mothers and children in tribal, hilly and backward areas.

Physical Targets and Achievements

Planned development of over three decades has resulted in vastly improved health facilities. The number of doctors and hospital beds have increased by more than two and a half times and that of nurses by more than six times. The number of medical colleges has increased from 30 before the initiation of the First Plan in 1950-51 to 106 at present. In rural areas, there are 6,246 primary health centres and

68,597 sub-centres at present, whereas none existed before 1951. Malaria, tuberculosis and cholera, which used to take a heavy toll of life have been controlled to varying degrees. No case of plague has been reported in the country since 1967. Smallpox which was a dreaded disease, has been eradicated. The general death rate has come down from 27.4 per thousand in 1951 to an estimated 11·8 per thousand in 1982 and life expectancy at birth has increased from 32 in 1941–51 to over 55 in 1982. The infant mortality rate has come down from 140 in 1975 to 114 in 1980.

To check the rate of growth of population, the family welfare programme was launched in 1952 as a national programme. The programme, which witnessed some ups and downs, is now well-poised to become a people's movement with the adoption of a new policy approved in 1980, and subsequent achievement of a national consensus. The population of India as per 1981 census stood at 68.52 crore with a decadal (1971–81) growth of 25 per cent which was marginally more than the 1961–71 growth of 24.80 per cent. The goal is to reach the birth rate of 21 and death rate of 9 per thousand population by 2000 AD.

The revised minimum needs programme, alongwith the training of multi-purpose health workers and a more vigorous pursuit of the programme to eradicate or control communicable diseases form the core of health care. The backward and tribal areas are now receiving preference in the implementation of the health programmes.

A number of training centres for different categories of health workers, *i.e.* nurses, sanitary inspectors, para-medical workers, non-medical supervisors, physiotherapists, etc., exist now. The plan of action on the report of the "Group on Medical Education and Support Manpower" for a three-tier reconstruction of entire health care system has been worked out. The scheme of involvement of community level workers, *i.e.*, teachers, post masters and graw-sevaks, after a short training, is being implemented.

The pattern of investment in different plan periods is given in table 8.1.

TABLE 8·1 PATTERN OF INVESTMENT (Rs. in crore)

Plan Period		Total Plan Investment/ Outlay	Plan Investment on Health	Investment in Health as percentage of total
First Plan .	(1951—56)	1,960·00	65·20	3·30
Second Plan	(1956—61)	4,672·00	140·80	3·00
Third Plan	(1961—66)	8,576·00	225·90	2·60
Annual Plans	(1966—69)	6,625·40	140·20	2·10
Fourth Plan	(1969—74)	15,778·80	335·50	2·10
Fifth Plan (Outlay)	(1974—79)	39,322·00	760·80	1·40
Annual Plan	(1979—80)	12,601·00	275·45	2·19
Sixth Plan (Outlay)	(1980—85)	97,500·00	1,821·10	1·80

NATIONAL HEALTH PROGRAMMES

Malaria

Malaria took a toll of 7.5 lakh lives in the pre-Independence period. A malaria control programme was, therefore, launched in 1953. In 1958, it was converted into the national malaria eradication programme. It succeeded in reducing the incidence from 7.5 crore in the pre-Independence period to only one lakh in 1965. Further, there were no deaths due to malaria in 1965. The situation thereafter deteriorated as the malarial parasite developed resistance to drugs and insecticides. The incidence of malaria increased from 1.48 lakh in 1966 to 64.7 lakh in 1976. The Government introduced a modified plan of operation from 1977 to tackle the situation effectively. There were only 16.77 lakh cases of malaria in 1983.

Training of personnel in methods of malaria eradication is imparted at the National Institute of Communicable Diseases, Delhi, and the regional offices of Health and Family Welfare at Bangalore, Bhubaneswar, Hyderabad, Lucknow, Shillong and Vadodara. The Indian Council of Medical Research is working on malaria in the field and in the laboratory.

Filaria

The national filaria control programme has been in operation since 1955. It is estimated that 30.4 crore people are exposed to the risk of filariasis. One and a half crore manifest the disease and 1.8 crore have the filarial parasites in their blood.

Activities under the programme are at present confined only to antilarval operations in urban areas where 178 filaria control units provide protection to 2.7 crore persons. One hundred and three filaria clinics are also functioning. Besides, 12 headquarter bureaux are functioning at the state level. So far, only 220 out of 295 districts in the endemic states have been surveyed. Filaria control work is in progress in 22 districts that have not been surveyed. Three field level research units are carrying out surveys in rural areas.

Training in filariology is given at three Regional Filaria Training and Research Centres at Calicut, Rajahmundry and Varanasi.

Smallpox

Smallpox was another great killer before 1947. The national smallpox eradication programme was launched in 1962 with emphasis on intensive primary vaccination campaign and revaccination of vulnerable group of population. As a result, the incidence of smallpox was brought down to zero in July 1975. Surveillance activities were, however, continued. The country was declared to have eradicated smallpox by the International Assessment Commission on 23 April 1977. Now it is heartening to note that the whole world has been declared free from smallpox.

Leprosy

The national leprosy control programme has been in operation since 1955. The number of people exposed to risk of leprosy is about 40 crore, of which 35.10 crore have been covered so far. The estimated leprosy cases are about 40 lakhs out of which about 10 lakhs are infectious. Under the national leprosy eradication programme (NLEP), 31.02 lakh cases had been recorded till the end of March 1984 excluding 2.84 lakh cases discharged as disease arrested/cured/died or left, etc., during 1983-84. Out of the recorded cases, 29.09 lakh cases are under regular treatment through a widespread network of leprosy control units/clinics/homes and hospitals. The methodology followed is early detection, regular treatment supported by health education, dose supervision and welfare of patients.

Till the end of March 1984, 395 leprosy control units, 16,985 survey education and treatment centres, 659 urban leprosy centres and 248 temporary hospitalisation wards of 20 beds each and 231 leprosy homes and hospitals with 33,860 beds have been established in the country. At present 75 reconstructive surgery units are also functioning for prevention and correction of deformities of hands, feet and face of the patients.

Training of medical and non-medical personnel is being imparted through 42 (32 government and 10 voluntary) training centres established under the programme. Research on leprosy is being conducted at the Central Leprosy Training and Research Institute, Chinglepattu, Tamil Nadu; Scheffillin Leprosy Research and Training Institute, Karigiri; Central JALMA Institute for Leprosy, Agra; Medical Research Centre, Bombay; School of Tropical Medicines, Calcutta; All India Institute of Medical Sciences, New Delhi and at many other places. A number of voluntary organisations are also carrying out specified items of research.

Multi drug regimen project (MDRP) in the form of a special campaign was launched on 2 October 1981 in the district of Wardha and from February 1982 in Purulia. By now the scheme has been introduced in 6 districts under Swedish International Development Agency assistance to NLEP.

A National Leprosy Eradication Commission has been set up for the guidance and surveillance of the programme. A National Leprosy Eradication Board has also been created as an executive body of the commission.

The bill introduced in the Parliament to repeal the Leper Act, 1898 to create a favourable climate for removal of the age-old social stigma of leprosy and to obtain co-operation of patients and public, has since been passed by the Parliament. New schemes for better treatment and welfare of patients and for augmentation of training and supervision of work and research activities in the field are being introduced. Six Regional Leprosy Training Research cum Referral Institutes are to be set up during current plan period. One is already under operation at Raipur in Madhya Pradesh and another has been set up at Gouripur in West Bengal.

Tuberculosis

Nearly 80 out of every one lakh people die of TB every year in the country. Approximately one crore people are suffering from radiologically active TB, nearly quarter of them being infectious. Over 600 clinics have been set up, of which 354 have been upgraded as district TB centres to undertake a districtwise TB control programme. Nearly 45,000 TB beds are available for in-patient treatment. Primary emphasis is now on domiciliary treatment. Seventeen centres provide training facilities to the medical and para-medical personnel in different parts of the country. The National TB Institute, Bangalore, conducts re-orientation courses for medical and para-medical personnel from different states for implementation of the district TB programme. The Institute also carries out operational research. A high priority has been accorded for expansion of TB control activities with its inclusion in the Revised 20-Point Programme. The target of detection of 10 lakh new TB cases fixed for 1982-83 has been achieved. During 1983-84, the target for detection of new TB cases was increased to 12.50 lakh.

Voluntary TB organisations including the Tuberculosis Association of India (the largest organisation) assist in combating the disease. There are more than 200 state and district TB associations all over the country.

D Control
gramme

In order to combat the STD (sexually transmitted diseases) on a war footing, the Centre and the state governments have established more than 300 STD clinics throughout the country. These clinics are mostly located at the district hospital headquarters, but in some states like Tamil Nadu and Himachal Pradesh, the STD clinics are located at the periphery level, *viz.* sub divisional headquarters.

To provide training facilities to the in-service medical and para-medical personnel in venereology, the Government is running two training centres, namely, the Institute for the Study of Sexually Transmitted Diseases, Madras Medical College, Madras and the STD Training and Demonstration Centre, Safdarjang Hospital, New Delhi. During 1984, a regional training centre is being established at Calcutta for the eastern zone and a regional training centre is being established at Nagpur for the western zone. A Regional Reference Laboratory has been functioning at the Office of the Serologist and the Chemical Examiner to the Government.

lindness

The national programme for the control of blindness was launched in 1975 and incorporates the earlier trachoma control programme started in 1968. About 450 lakh persons are suffering from visual impairment and over 90 lakh are blind, including about 60 lakh who can be cured by operations. The national programme aims at educating people on eye care, providing ophthalmic services to rural areas through mobile ophthalmic units and establishing a permanent infrastructure for eye health services in the existing public health delivery system.

Eighty fully equipped mobile units are functioning in different parts of the country. Each unit carries out from 1,500 to 2,000 intra-ocular operations every year. Medical college-hospitals and district hospitals in the states are equipped to improve the quality of treatment, research and training in ophthalmology. The ophthalmology departments of 51 medical colleges have been developed to become community ophthalmic centres. Four institutes of ophthalmology have achieved the status of regional institutes. Apart from the mobile units, 360 hospitals have been upgraded so as to start an eye unit in each district. So far 1,670 primary health centres have been provided with ophthalmic equipment. Ophthalmic assistants are being posted in these centres. The existing four institutes of ophthalmology and Dr. Rajendra Prasad Centre of Ophthalmic Sciences, New Delhi are being assisted for manpower development, research and for referral services. The training course for ophthalmic assistants has been started in 35 centres.

Eye ointment tubes are being distributed to the states to control trachoma and associated infections.

Government gives financial assistance to the maximum of Rs 12,000 per eye camp to voluntary agencies and *panchayat* bodies Rs 60 per intra-ocular operation.

Cancer

At present 150 general hospitals, including medical college—hospitals, offer facilities for cancer treatment by surgery, radiotherapy and chemotherapy. Research on cancer is being conducted at 16 hospitals and specialised institutes all over the country. The Indian Council of Medical Research has initiated collaborative studies on oral, cervical and breast cancer at various centres besides establishing population based Cancer Registries at Bombay, Madras and Bangalore and

Hospital Tumour Registries at Chandigarh, Trivandrum and Dibrugarh. During the Sixth Plan, the Government recognised the existing Regional Cancer Centres at Ahmadabad, Bangalore, Cuttack, Gwalior, Guwahati and Trivandrum as regional centres for cancer research and treatment in addition to the existing Regional Cancer Centres at Calcutta, Madras, Delhi and Bombay. The Government sanctioned assistance of Rs 10 lakh each to Tamil Nadu, Gujarat and Punjab for installation of Cobalt Therapy Units. The limit of Rs 10 lakh has now been raised to Rs 12 lakh.

Under the all India hospital post partum programme 25 post partum detection centres have been set up in 25 medical colleges. Seven early cancer detection centres have been set up with WHO aid.

The regional centres and cancer detection centres carry out periodical programmes on mass education and mass screening in the adjoining areas.

The Indian Council of Medical Research is engaged in working out the feasibility modules for primary and secondary prevention of cancer of the oral cavity and cancer of uterine cervix in females which together constitutes 50 per cent of the cancer cases in the country.

Goitre

In India, endemic goitre is highly prevalent in the entire sub-Himalayan range covering Jammu and Kashmir, Himachal Pradesh, Punjab, Haryana, Uttar Pradesh, Bihar, West Bengal and all the north-eastern states. It is also found to be endemic in some districts of Maharashtra, four districts of Madhya Pradesh and two districts of Gujarat. The average prevalance rate in these areas in 30 per cent ranging from 10 to 60 per cent.

The national goitre control programme was launched towards the end of the Second Plan to tackle the problem of goitre, which is epidemiologically associated with mental retardation, retardation of physical growth, especially in young children and adolescents, deafness, cretinism and thyroid cancer at a later stage. The core of the programme is (1) the identification of the endemic goitre areas and (2) production and supply of iodised salt to the endemic areas. Twelve plants for the iodisation of salt had been set up by 1980 under the public sector. After five years of continuous supply of iodised salt to the endemic areas it is planned to have a resurvey to assess the impact of the programme.

From June 1983, the iodization of salt has been commercialised both in the private and public sectors.

Kala azar

Kala-azar Cell, since its inception in 1977, is collecting data about the incidence and deaths from all states and union territories. During 1983, *kala-azar* incidence was 14,406 with 135 deaths.

Japanese Encephalitis

The Japanese encephalitis cell, set up in 1978, collects data about the incidence and deaths from all over the country. During 1983, Japanese encephalitis incidence was 1,716 with 581 deaths.

HOSPITALS AND DISPENSARIES

Medical services are primarily provided by the Central and state governments. Certain charitable voluntary and private institutions also provide medical relief. The district and sub-divisional hospitals are being further developed by removing deficiencies in referral services. The number of hospital beds (both government and private) was 4.9 lakh in 1982 as compared to 1.13 lakh in 1951-52. The bed-population ratio is now 0.7 per 1,000 population, which was 0.24 at the commencement of the First Plan. The number of registered doctors and nurses at the end of 1981-82 was 2.69 lakh and 1.63 lakh respectively.

Central Government Health Scheme

The Central Government Health Scheme (CGHS) was launched in July 1954 for Central Government employees and their families in Delhi. It now covers Allahabad, Bombay, Calcutta, Kanpur, Madras, Bangalore, Hyderabad, Meerut, Patna, Nagpur, Pune, Jaipur, Ahmadabad and Lucknow. Central Government pensioners and widows of Central Government employees, who are getting family pension, are also eligible for this scheme. The staff and families of certain autonomous and semi-government organisations in Delhi and Members of Parliament are also covered by it. It has also been extended to former members of Parliament, former Vice-Presidents, former Governors, former retired Judges of High Courts and the Supreme Court and to Defence industrial employees at all stations (except Bombay) where it is in operation. In 14 selected areas in Delhi the scheme has been extended to the public on payment of prescribed charges.

The industrial staff and the work charged staff in the establishments run by various ministries/departments of the Central Government are now allowed medical facilities under the scheme. The monetary limit of Rs 250 per month for deciding the wholly/mainly dependents of the government servant has now been raised to Rs 350 per month.

In addition to allopathic dispensaries, *ayurvedic, unani,* homeopathic and *siddha* dispensaries units have also been set up under the scheme to offer a choice between different systems of medicine. At present there are 276 dispensaries and hospitals of different systems and polyclinics functioning under CGHS. Apart from this, 151 government and non-government hospitals have been recognised under CGHS in 15 cities.

Primary Health Centres

Primary health care is being provided to the rural population in the country through a net work of 68,597 sub-centres, 6,246 primary health centres (PHCs), 3,199 subsidiary health centres and 472 upgraded PHCs and at village level by 4,59,954 trained *dais* and 2,90,565 health guides besides large number of rural dispensaries working under the state governments/union territory administrations. It is proposed to expand these facilities further in a phased manner so as to have one primary health centre for every 30,000 population (20,000 in hilly and tribal areas), a sub-centre for every 5,000 population (3,000 in hilly and tribal areas) and an upgraded CHC (Community Health Centre) for every one lakh population by 2000 AD. It is also proposed to provide one trained *dai* and one health guide for every village by the end of Sixth Plan period in the states/union territories, where these schemes are being implemented.

INDIAN SYSTEMS OF MEDICINE

Indian systems of medicine are very popular among the rural population in many parts of the country. People consult hereditary *vaidyas* and *hakims,* who practise medicine as a family profession.

About 2.71 lakh registered practitioners are practising these systems. At present, 13,565 dispensaries and 464 hospitals with 13,155 beds are functioning in the country.

Under-Graduate Education

There are 98 ayurvedic, 17 unani and one siddha under-graduate college in the country. Out of these, about 55 ayurvedic and 11 unani colleges are run by voluntary organisations. A majority of the colleges are, however, affiliated to the respective universities in the states, in which they are established. The Government earlier provided partial financial assistance to some of the privately run colleges under these systems of medicine for construction of college buildings, purchase of equipment, etc., up to a maximum of Rs 5 lakh. The scheme has since been revised and financial assistance is now provided for non-recurring expenditure to the extent of Rs 1.60 lakh per college. The annual admission capacity for under-graduate education in ayurveda is 3,940, in unani medicine 680 and in siddha 75.

Post-Graduate Education

Besides the National Institute of Ayurveda, Jaipur and the two full-fledged post-graduate institutions in ayurveda at the Banaras Hindu University and the Gujarat Ayurved University, Jamnagar, there are 19 colleges having post-graduate facilities in ayurveda, two in unani and one in siddha. The admission capacity for post-graduate courses in ayurveda is 223, unani 27 and siddha 20. All the post-graduate institutions and departments are wholly financed by the Government except the non-government colleges in Maharashtra. It has been decided to set up a National Institute for Unani Medicine at Bangalore.

The Central Council of Indian Medicine regulates the practice and education of ayurveda, unani medicine and siddha.

Homoeopathy

There are 125 institutions imparting training in Homoeopathy, which have been recognised by various state boards and councils including the National Institute of Homoeopathy. Twenty-one of these are government institutions.

Under the Homoeopathic Central Council Act, 1973, a Central Council of Homoeopathy was set up on 8 August 1974. It determines the minimum standards of Homoeopathic education and maintains a Central Register of Homoeopathic practitioners in the country.

There are 120 hospitals with 3,771 beds and 2,099 dispensaries and 1.16 lakh practitioners of Homoeopathy throughout India.

Nature Cure

The Nature Cure Advisory Committee in the Ministry of Health is responsible for the development of nature cure. The Government gives grants to 24 nature cure research and educational institutes.

Research

The Central Council for Research in Indian Medicine and Homoeopathy, set up in 1969, was dissolved on 10 January 1979 and four Central councils on the lines of the Indian Council of Medical Research, were constituted. These are: (i) Central Council for Research in Ayurveda and Siddha (CCRAS), (ii) Central Council for Research in Unani Medicine (CCRUM), (iii) Central Council for Research in Homoeopathy (CCRH), (iv) Central Council for Research in Yoga and Naturopathy (CCRYN). These apex bodies in the concerned systems of medicine are financed by the Central Government.

CCRAS is associated with wide research activities being carried out in 28 major institutes and 63 research units. The Council has released patents/know-how of *Ayush*-84 and *Ayush*-56 to entrepreneurs through National Research Development Corporation of India. To disseminate knowledge through publications/literature, etc. the CCRAS is publishing, on a quarterly basis, the *Journal of Research in Ayurveda and Siddha*, the *Bulletin of Medico-Ethno-Botanical Research* and the *Bulletin of Indian Institute of History of Medicine*. Besides, a documentation bulletin is also published. The Council has released a monograph containing 2,900 folklore medical claims.

CCRUM has one central research institute, four regional research institutes, twelve clinical research units, four literary research units, seven drug standardisation research units, two units for survey of medicinal plants, one central herb garden and museum, one composite drug research scheme, one mobile clinical research unit, one clinico-pharmacological unit and one information centre and two schemes for screening of contraceptive agents. The literary research units edit and translate rare manuscripts. A handbook of common remedies in unani medicines, already available in Hindi, English and Urdu, has been printed in Tamil and Telugu and is being translated into Arabic, Oriya and Kannada. The Council has brought out 13 publications and publishes a quarterly newsletter also.

CCRH has two central research institutes, two regional research institutes, and about 25 research units to conduct clinical research, drug research and survey programmes. Useful results have been obtained by the Council in the treatment of bronchial asthma, allergic dermatitis, amoebiasis, tonsilitis, sinusitis and arthritis. Four volumes of the *Homoeopathic Pharmacopoeia of India* have already been published.

CCRYN has been providing grants-in-aid to 8 yoga and 17 nature cure institutions which are conducting research on some diseases. The Council is entrusted with the task of formulation of curricula for courses in yoga and naturopathy. Intensive research work is being carried out in the Central Research Institute of Yoga. The Vishwayatan Yogashram, New Delhi conducts training courses in yoga and yogasans. The Ashram is aided by the Government.

Indian Medicines Pharmaceutical Corporation

The Government has established the Indian Medicines Pharmaceutical Corporation Ltd., a public sector undertaking to make available efficacious drugs in collaboration with the Kumao Mandal Vikas Nigam, a public sector undertaking of the Uttar Pradesh Government.

Formularies

The first part of the ayurvedic, unani and siddha formularies has been published.

DRUGS

The Drugs and Cosmetics Act, 1940 as amended from time to time regulates the import, manufacture, sale and distribution of drugs and cosmetics in the country. Under the Act, the import, manufacture and sale of sub-standard, spurious, adulterated or misbranded drugs are prohibited. The Government is empowered to check the quality of imported drugs, co-ordinate the activities of the states, lay down regulatory measures and standards of drugs and grant approval for the import or manufacture of new drugs. The control over the quality of drugs, which are manufactured, sold and distributed in the country is exercised by the state governments. Zonal Offices of the Central Drugs Standard Control Organisation at Bombay, Calcutta, Ghaziabad and Madras maintain close liaison with the state organisations for enforcement of the provisions of the Drugs and Cosmetics Act, 1940. The Central Drugs Standard Control Organisation arranges training programmes for personnel concerned with drugs standard control.

The Central Drugs Laboratory, Calcutta, functions as the testing laboratory for imported drugs as well as analytical quality control of drugs manufactured within the country on behalf of the Centre and state drug control authorities and is the appellate laboratory under the Drugs and Cosmetics Act to test samples of drugs sent to it by courts. The Central Indian Pharmacopoeia Laboratory, Ghaziabad, tests samples of non-biological drugs and draws up the standards of drugs included in the Indian Pharmacopoeia.

Prices

Prices of bulk drug formulations have been under some kind of statutory control since 1962, but effectively from 1970. The Drug (Prices Control) Order, 1970 has now been replaced with Drug (Prices Control) Order, 1979. As a result of these measures the wholesale price index of drugs and medicines has been kept steady *vis-a-vis* other commodities.

Vaccine Production

India is self-sufficient in the production of all vaccines required for immunization programme except polio and measles. The polio vaccine is imported in bulk in a concentrated form. It is diluted and ampouled at the Haffkine Bio-Pharmaceutical Corporation Ltd., Bombay. The indigenous production of polio vaccine is being taken up.

Immunization Programme

The major causes of sickness and death of children are infectious diseases many of which are preventable by immunization. In addition to those who become ill or die, many children can be disabled for long by complications following these illnesses. The expanded programme on immunization was started in 1978 with the objective of reducing the morbidity and mortality due to diphtheria, whooping cough, tetanus, poliomyelitis, tuberculosis and typhoid fever by providing vaccination services to all eligible children and pregnant women by 1990.

The immunization programme is a long term one and is an integral component of the primary health care services. These services are provided through the health care delivery system. Supplies are arranged and linked with the cold chain facilities at state, district and PHC levels. In addition, hospitals, dispensaries and MCH clinics in the urban areas have also been equipped to serve as supply and service centres for this programme. Starting from 1978, the number of beneficiaries has continuously increased. It is our objective to provide full immunization coverage by 1990—85 per cent of the infants and cent per cent of pregnant women.

Objectionable Advertisements

The Drugs and Magic Remedies (Objectionable Advertisements) Act, 1955, prohibits the publication of objectionable advertisements relating to sexual stimulants, alleged magic cures for venereal diseases and diseases peculiar to women. The Act, amended in 1963, also prohibits the import and export of objectionable advertisements and authorises the customs and postal authorities to intercept articles suspected to contain objectionable advertisements.

lical Depots
Factories

The Medical Stores Organisation with six units at Bombay, Calcutta, Guwahati, Hyderabad, Karnal and Madras procures and ensures the supply of quality medical stores and equipment, to about 16,000 indenting hospitals and dispensaries all over the country at the most economical rates. The Organisation has three chemical laboratories attached to the Medical Store Depots at Bombay, Calcutta and Madras and an independent biological laboratory and animal house at Madras for conducting biological testing of drugs. Most of the clients of the Medical Stores Organisation are small hospitals and dispensaries located in rural or suburban areas. It receives supplies from international agencies and distributes them to the beneficiaries. Various drugs and other commodities required to be distributed for running national health programme are handled by the Organisation. It also arranges relief supplies to the victims of national calamities in affected areas in all parts of the country.

At the factories of the organisation at Bombay and Madras, a large number of drugs and dressings are manufactured to meet the requirements of the indenting units.

OOD
ULTERA-
ON

The Prevention of Food Adulteration Act, 1954 has been in force since 1 June 1955 with the objective of ensuring that food articles sold to the consumers are pure and wholesome. It also aims at preventing fraud or deception and encouraging fair trade practices.

The Act was amended in 1964 and thereafter in 1976 for plugging the loopholes and for making the punishments more stringent. A minimum imprisonment of six months with a minimum fine of Rs 1,000 is envisaged under the Act for cases of proven adulteration whereas for the cases of adulteration which may render the food injurious to cause death or such harm which may amount to grievous hurt, the punishment may go up to the life imprisonment and a fine which shall not be less than Rs 5,000.

The administration of the Prevention of Food Adulteration Act and the provisions thereunder is the primary responsibility of the state governments and the union territory administrations. The Central Government lays down broad policies in this regard, carries out the necessary amendments to the PFA Act and Rules and advises the state governments and the union territory administrations in the effective implementation of the programme.

For advising the Central or the state governments with regard to implementation of the Act, there is a statutory body namely, the Central Committee for Food Standards. The Committee is assisted by various technical sub-committees.

The Act is by and large implemented by the local bodies. The states have been advised to establish separate food cells having properly qualified and experienced staff.

There are four Central food laboratories *viz.*, Central Food Laboratory, Mysore situated at CFTRI, Mysore; Central Food Laboratory, Ghaziabad situated at Food Research and Standardisation Laboratory Ghaziabad Central Food Laboratory, Pune at State Public Health Laboratory, Pune and Central Food Laboratory, Calcutta. Samples are sent to these appellate laboratories by the courts. Statements of facts contained in the report given by the Laboratory is considered to be final and conclusive evidence.

There are 70 food laboratories under the control of state governments/local bodies also. The samples lifted by the food inspectors are sent to these laboratories and on the basis of the reports prosecutions are launched in the courts. The Central Government has assisted the states and union territories in equipping these laboratories.

Under Joint FAO/WHO Food Standards programme, Codex Alimentarius Commission has been established to formulate world-wid standards for food. India is also a member of this body. A Nationa Codex Committee has been formulated under the Ministry of Healt with representatives from different departments/ministries to formulat the Indian viewpoint on various matters concerning internationa food standards programme.

Training being an important component of the programme fo prevention of food adulteration, the Directorate General of Healt Services organises in-service training programme for different functionaries responsible for implementation of the programme and the implementation of the PFA Act, 1954 and the Rules, 1955. Foo inspectors, analysts and the senior officers concerned with the implementation of the Act in the states are provided training. The Directorate General of Health Services organises trainings in collaboratio with various institutes in the country. Fellowships are also provide to the analysts by WHO for the purpose of giving them training in sophisticated methods of analysis.

A food contamination monitoring study had been initiated unde the auspices of FAO where 10 national laboratories have been participating in the survey of common contaminants, namely, pesticides heavy metals and aflatoxin.

The Ministry of Health is responsible for co-ordination of the activities of the states/union territories. It brings out an annua report on the activities in the states on the implementation of PFA Act and Rules. As per the report there has been a decline in the percentage of adulteration, the figures for the same during 1971 an 1981 being 20.5 per cent and 14.2 per cent respectively.

NUTRITION

The health services fight malnutrition through the network of medica and health centres. State nutrition divisions have been set up i the Health Directorates of 18 states and two union territories t assess the diet and nutritional status in various groups of population conduct nutrition education campaigns, supervise supplementar feeding programmes, and nutritional ameliorative measures. Thes divisions are responsible for monitoring the nutritional status of the population in areas affected by natural calamities.

Surveys conducted by the state nutrition divisions and the Nationa Nutrition Monitoring Bureau have revealed that the protein-calori malnutrition and deficiency diseases are prevalent in large section of the population. The most affected are young children, pregnan and lactating mothers.

The Government is implementing various nutrition programmes. Most of the programmes, which have been started, are in the for of supplementary feeding programmes. Important among them ar the school mid-day programmes for primary school children an the special nutrition feeding programmes for pre-school children an pregnant and lactating mothers. Two crore beneficiaries will b covered in the Sixth Plan. Under the applied nutrition programm the population in rural areas is educated about the need for consumption of nutrition foods such as leafy vegetables, fruits, fish an eggs and encouraged to produce those locally. A scheme know as integrated child development services (ICDS) has been introduced. Under it a package of services such as supplementary nutrition healt and non-formal education, referral services, immunisation, health check-up and safe water supply will be provided to the vulnerable groups in 1,000 selected blocks including urban, rural and tribal areas.

To prevent blindness among children due to Vitamin A deficiency in their diet, a concentrated dose of Vitamin A is given orally every six months through health centres. This programme covered about 84 lakh beneficiaries during Fifth Plan. Two and a half crore children are being covered annually in the Sixth Plan period. Similarly, to prevent nutritional anaemia among women and children, combined tablets of iron and folic acid are being distributed through health centres. The programme is expected to cover six crore children and six crore mothers in the Sixth Plan. At present, the programme covers 2.4 crore mothers and children annually.

The National Institute of Nutrition, Hyderabad and the All India Institute of Hygiene & Public Health, Calcutta are the principal organisations in India for nutrition research and training of nutrition workers.

MEDICAL EDUCATION, AND RESEARCH

To promote medical education, 106 medical colleges, as against 30 in 1950-51, besides 22 dental colleges and 11 other institutions are functioning in the country. Establishment of new medical colleges and expansion of the existing ones have raised the admission capacity from 2,500 in 1950-51 to over 12,500 in 1982-83.

The Indian Medical Council functions as a guardian for the maintenance of standards in medical education.

Foreign assistance is being received in the form of fellowships from WHO, Commonwealth Foundation and Colombo Plan agencies. Such assistance is useful for meeting the training needs of personnel under various medical and public health programmes. During 1983, 147 persons were nominated for WHO fellowships, 94 for Colombo Plan fellowships and 43 for Commonwealth fellowships.

Three hundred fellows from various countries were admitted in 1983 to various institutions in India for training in various health and family welfare related subjects under the WHO and Colombo Plan fellowship programmes.

NURSES

There are 296 schools of nursing attached to all major hospitals. Approximately 7,000 nurse midwives qualify from these schools. These schools are affiliated with respective state nursing councils. Entrance requirements are 12th pass preferably with science.

There are 350 auxiliary nurse midwives schools and approximately 6,000 ANM/Health workers (female) qualify from these schools. Most of these schools are given Central assistance. All these personnel work at the sub-centre level. Entrance requirements for this course is 10th pass.

There are 16 colleges of nursing attached with various universities offering B.Sc. Nursing and 10 colleges offering post-basic B.Sc Nursing. Approximately 500 nurses obtain B.Sc. degree and 200 get post-basic degree in nursing.

Apart from certificate and degree programme, there are 4 colleges i.e. SNDT, Bombay; RAK College of Nursing, Delhi; College of Nursing, Vellore and College of Nursing, Chandigarh, which offer post-graduate degree in nursing i.e. Master in Nursing. About 30 nurses obtain Masters degree every year.

The Indian Nursing Council, which controls the standards of nursing education conducts inspections for all schools and colleges The Council has developed short-term (6 months) courses in several clinical specialities.

Medical Research

The Indian Council of Medical Research (ICMR) initiates, develops and co-ordinates medical research in the country. It is cent per cen financed by the Government. The Council maintains, besides a number of semi-permanent units, 18 permanent research institutes and centres. These are : the National Institute of Nutrition, Hyderabad the National Institute of Virology, Pune; the Tuberculosis Research Centre, Madras; the National Institute of Cholera and Enteric Diseases, Calcutta; the Institute of Pathology, New Delhi; the National Institute of Occupational Health, Ahmadabad; the Institute for Research in Reproduction, Bombay; the Central JALMA (Japanese Leprosy Mission for Asia) Institute for Leprosy, Agra; the Institute of Immunohematology (formerly Blood Group Reference Centre), Bombay; the Vector Control Research Centre, Pondicherry the Malaria Research Centre, Delhi; the Institute of Research in Medical Statistics, New Delhi; the Institute of Research in Medica Statistics, Madras; the Laboratory Animal Information Services Hyderabad; the Food and Drug Toxicology Centre, Hyderabad; the Cytology Research Centre, New Delhi; the Enterovirus Research Centre, Bombay; and the Rajendra Memorial Research Institute o Medical Sciences, Patna. In addition, Regional Medical Research Centres have also been established, one each at Port Blair, Bhubaneswar and Dibrugarh.

There are two statutory bodies to conduct research in various branches of medical sciences. These are : the All India Institute o Medical Sciences, New Delhi and the Post-Graduate Institute o Medical Education and Research, Chandigarh. There is also an Al India Institute of Speech and Hearing at Mysore, which has been functioning under the Ministry of Health and Family Welfare sinc 1965. Clinical facilities are available at all these institutes.

The Directorate General of Health Services supports selected research projects in relation to *kala-azar*, plague, etc. Financial assistance is also provided to various bodies for conducting research. A present two projects, Kalazar Unit, Patna and the Plague Surveillance Unit, Bangalore, are functioning.

Some of the institutions working in the field of various specialized medicines are : the Indian Cancer Research Centre, Bombay; Cance Institute, Madras; the Chittaranjan Cancer Research Centre, Calcutta the Rotary Cancer Hospital at the All India Institute of Medica Sciences, New Delhi; the National Tuberculosis Institute, Bangalore the Vallabhbhai Patel Chest Institute, Delhi; Central Leprosy Teaching and Research Institute, Chingleput (trains medical and para-medica personnel, treats leprosy patients and is recognised as WHO Regiona Centre); the National Institute of Communicable Diseases, Delhi the All India Institute of Hygiene and Public Health, Calcutta; the Rural Health Unit and Training Centre, Singur; the Urban Health Centre, Chetla and the Central Drugs Laboratory, Calcutta (maintains a herbarium and gives technical advice to drug manufacturers).

The Central Research Institute, Kasauli is the biggest and mos important producer of immunobiologicals, *viz.*, DPT, DT, TT, antityphoid, anti-rabies, yellow fever vaccines and cholera vaccine as also for anti-sera and diagnostic reagents/anti-gens. This is the only Institute producing yellow fever vaccine in South East Asia region.

The Institute trains candidates sponsored by WHO, other international agencies and vaccine production organisations in the country in the techniques of production of various vaccines and sera and their quality control. Besides running regular courses of B.Sc., M.Sc. and M.Phil. (Micro), it also conducts short-term courses for diagnosis, prevention and treatment of rabies, quality control of vaccines and sera and training course for the drug control officers. The Institute conducts research to improve the techniques of production and quality control of the vaccines. Efforts are being made to develop newer vaccines like measles vaccine. The Institute is engaged in important epidemiological, sociological, bacteriological and operational research connected with the TB control programme.

The Pasteur Institute of India, Coonoor, Nilgiris is engaged in conducting research in rabies, influenza, other respiratory virus injections etc., and in the production of anti-rabies vaccine and other vaccines. The DPT project is being executed by the Institute under the expanded programme on immunisation during the Sixth Plan period. This is a cent per cent Centrally assisted plan project which was started in 1978-79. The Institute is implementing a WHO/UNDP funded project for updating its anti-rabies vaccine production technology.

ealth
lucation

Central Health Education Bureau is an apex organisation in health education in the Directorate General of Health Services. The Organisation was set up in 1956 to co-ordinate and promote health education through various national and state health programmes. The Bureau has six technical divisions to implement its activities. The activities include interpreting the plans and programmes of the Ministry of Health and Family Welfare, to train key health and community welfare workers in health education; to prepare and distribute health education material to be adopted by states and other agencies; to carry out research in behaviour changes of the community in relation to health practices; to evolve effective methodology for training; to render technical assistance to official and non-official agencies in the field of health education; to develop health education syllabi for different age groups of school children and teacher training courses; and to co-operate and collaborate with international agencies in promoting health education activities.

The Bureau deals with the development of health education bureaux in the states and union territories. So far 21 states and 5 union territories have set up health education bureaux. Seventynine district health education units have also been set up. The Bureau keeps close liaison with all health education units and has been providing technical guidance.

The Bureau took up the media activities since its very inception to interpret plans and programmes of the Ministry. It now publishes four journals *Swasth Hind* (English), *Arogya Sandesh* (Hindi), *DGHS Chronicle* (English Quarterly), *Swasth Shiksha Samachar* (Hindi quarterly) besides a house journal, *Impact*.

The Bureau brings out printed publicity material for various national health programmes, besides prototype health education material to be adopted by the states in the regional language according to their needs.

The Bureau organises exhibitions and helps in production of films on health. The scripts on seasonal topics and national health programmes are also prepared in the Bureau and sent to Radio and TV stations for preparing suitable programmes for different audience groups.

The Research and Evaluation Division of the Central Health Education Bureau is engaged in carrying out researches related to behaviour of the community in relation to acceptance of health practices. The Division has so far completed 56 research studies in relation to malaria, smallpox, leprosy, nutrition, water supply, expanded programme on immunization and training programme. The Division also trains health professionals in research methodology; under which four training courses have been conducted.

The Bureau conducts a diploma course, two certificate courses in health education and five other in-service training courses for different categories of medical and para-medical personnel.

The School Health Education Division of the Central Health Education Bureau is monitoring a Centrally sponsored national school health service scheme since 1 April 1977. The objective of the scheme is to provide school health services to the students of primary classes in rural areas through the net work of primary health centres.

In addition to this, an intensive pilot project on School Health Services with the financial assistance of SIDA is being monitored in 25 blocks of 20 selected states/union territories in the country.

The Bureau is also providing consultancy services in developing and strengthening health education component of formal and non-formal system of education. Health education syllabi for different levels of school education have been developed and utilised by various boards of education and teacher training institutions.

FAMILY WELFARE

Family welfare programme, which is an essential part of our strategy of enlarging welfare is being implemented as a wholly voluntary programme and as an integral part of the overall strategy of growth covering health, maternity and child care, family welfare, women's rights and nutrition. The main objective is to reach over 12 crore literate and illiterate couples in the various reproductive age groups, living in urban and remote rural areas for giving information and education on the merits of having small family. To achieve this goal a broadbased mass education and motivation programme is being pursued.

Though officially the family planning programme in India was launched in 1952, the birth control movement in the country is older than that. The first two birth control clinics anywhere in the world were established in Karnataka as far back as in 1930. In those days, birth control was not talked about freely. In the West as well as in India, some people did practice it, but, they belonged to the elite. Some traditional methods of contraception were used in India but there was no such thing as a government sponsored organised family planning programme. There was, however, a good deal of consciousness amongst the enlightened people in the country that in the interest of happy family life and the well-being of the community, contraception facilities should be provided to those who wanted them.

The establishment of the two clinics in Karnataka in 1930 is indicative of this.

AMILY
ELFARE
NDER
LANS

With the launching of the First Plan, India entered the era of planning. In recognition of the fact that a rapidly growing population would be a hindrance in raising the standards of living of the people, family planning was adopted as an official programme in 1952. During the First and Second Plans, the programme was taken up in a modest way with clinical approach and the stress was mainly on research in the field of demography, communication, physiology of reproduction and motivation. Centres were also established in certain areas for providing clinical services and advice on family planning to those who came to seek it.

The programme was reorganised in the Third Plan and the "Clinical approach" under which the message, services and supplies of contraceptives were sought to be made available to the people on a cafeteria basis in regard to adoption of the methods. A full fledged Department of Family Planning was created at the Centre in 1966 and the programme was reorganised and made target-oriented on the basis of a report of a sub-committee.

In the Fourth and Fifth Plans, the programme was accorded a very high priority in the planning process. During these years the programme underwent great expansion, consolidation and integration of family planning with maternal and child health care. As a result of independent evaluation of the programme, important changes were introduced in it to make it more responsive to the larger needs of the people. These changes embraced almost all areas relevant to family planning mass education and motivation, services and supplies, training of workers, research and evaluation, association of voluntary organisations with the programme and systematic involvement in it of such institutions as those representing women, workers in the organised sector of industry and their employers.

For disseminating information and educating people about family welfare, press, films, radio and television, oral and visual communication media like song and drama troupes and inter-personal communication through a network of media and extension workers are being used extensively. Besides the eligible couples, an effort is also being made to reach potentially important sections of population to motivate them to accept small family norm when they reach reproductive stage. Population education is being introduced in the formal school and university systems in the country. With the co-operation and assistance of all official and non-official agencies working in the country for development programmes, like trade unions, co-operatives and *panchayats,* etc., their training programmes are being used for introducing population education through non-formal channels.

nplementation
achinery

The programmes are implemented through the state governments for which cent per cent central assistance is provided. In rural areas, the programme will be further extended through a network of primary health centres and sub-centres. The Sixth Plan envisaged the establishment of 40,000 additional sub-centres during 1980-85. Maternal and child health care and expanded programme on immunisation are also a part of the family welfare programme.

The Central Family Welfare Council advises on family welfar programmes at the national level. A number of central committee like the research co-ordination committee have been set up to stud the progress of research programme.

Voluntary organisations and private medical practitioners are als associated to make the maximum use of available rescources fo optimum results. The programme is implemented through 5,42 rural, 2,505 urban family welfare centres and 65,643 sub-centres Besides, 5.780 other institutions also render services.

PERFORMANCE

STERILISATION AND IUD

Since the inception of the programme 447.42 lakh sterilisations an 127.29 lakh IUD insertions have been done, giving a rate of 61.5 pe thousand population for sterilisations and 17.5 for IUD insertion upto 31 March 1984.

Nirodh

Between April 1983 and March 1984, 26.50 crore pieces of *nirod* were sold under the commercial scheme operated through a networ of over 4.15 lakh retail shops by 12 leading consumer goods mar keting companies in India. Under the free distribution schem 26.29 crores pieces of *nirodh,* 982 diaphragms, 33,889 jelly|crea tubes and 5,733 foam tablets were distributed during the same period

Oral Pills

The oral pill programme was extended to all the urban centres including those run by local bodies and voluntary organisations an those primary health centres where the programme could be moni tored and patient followed up. The pills are now being distribute through 5,360 rural and 2,687 urban centres/hospitals in the country

Impact of the Programme

It is estimated that 29.2 per cent of 12.37 crore eligible couple whose wives are in the reproductive age group—15-44 were pro tected by one or another of the approved methods of family welfar as on 31 March 1984. As a result of the work done upto 31 Marc 1984 estimated 609 lakh births had been averted.

Medical Termination of Pregnancy

The programme of medical termination of pregnancy through well trained doctors in well-equipped approved hospitals is essentially health care measure. But in a way, it supplements the family wel fare programme as it provides for legalised abortion in cases o contraceptive failures also. A good proportion of the acceptors o abortion go in for some form of contraception like sterilisation, IUD etc. Since its inception in April 1972 a total of 33.6 lakh termina tions have been done upto March 1984 under the Medical Termina tion of Pregnancy Act, 1971.

Maternal and Child Health Programme

Care of mothers and children, the vulnerable groups of the societ plays a pivotal role in family welfare programmes. The maternit and child health programmes (MCH) are directed towards effectiv ante-natal care, ensuring safe and aseptic delivery and appropriat post-natal care, initiation and maintenance of breast feeding, timel immunisation against .common infectious diseases, control o diarrhoea, attention to growth and provision of basic medical care.

Infrastructure of health is being extended and manpower bein trained to achieve these objectives of MCH care. To provide speci lised paediatric care, paediatric units in districts, sub-divisional hosp tals and newborn units of district hospitals have been and are bein equipped. A sum of Rs 10.28 crore has been provided during 1984-85 for procurement of vaccines and MCH drugs for immunising children and mothers against diseases and preventing nutritional anaemia.

Training of Multipurpose Workers

To ensure a package of health and family welfare services at the peripheral level multipurpose workers are being trained. The training is expected to be completed in all the districts during the Sixth Plan period. Retraining of district level medical officers and the 'key trainees' is organised at seven central training institutions and that of medical officers of primary health centres and block extension educators at 47 health and family planning training centres. The para-medical staff of the block is trained at the selected primary health centres.

Special Schemes

Four schemes, namely, all India hospitals post partum programme at district and sub-district level hospitals and PAP smear test facilities in medical colleges selected for this purpose; revamping of organisational set up in urban slums of the country; sterilisation beds scheme; and renovation of IUD room at rural family welfare centres attached to primary health centres, are being implemented as special schemes.

The post partum programme is a maternity centred hospital based approach to family welfare programme and now covers 554 medical institutions at national, state and district levels. These includes 104 medical colleges and two post graduate institutions. Thus the target set by the Planning Commission for extension of the programme to district hospitals during the Sixth Plan had been achieved by 1982-83.

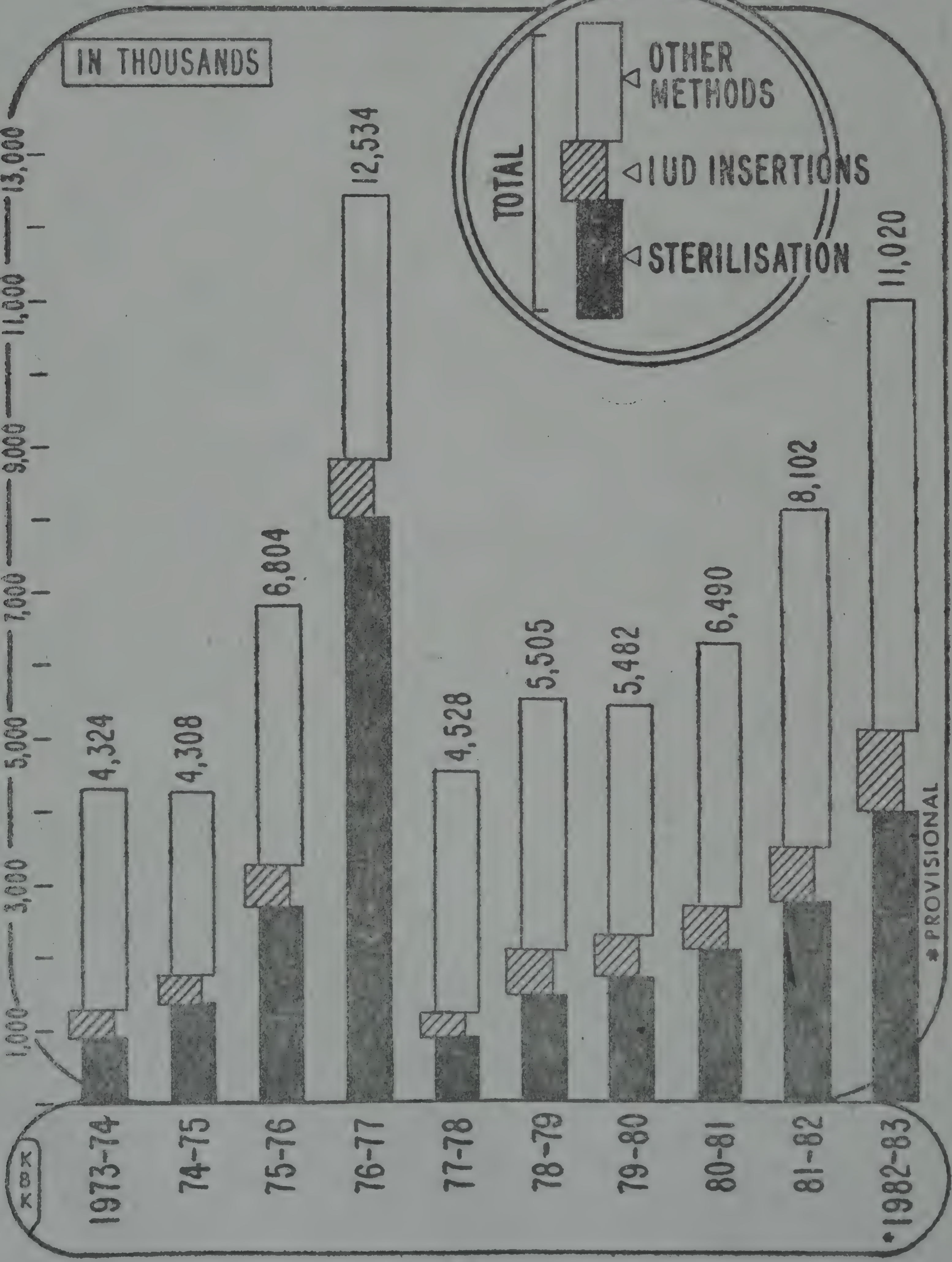
Besides, 25 medical colleges are also implementing PAP smear test facilities programme for early detection of cervical cancer among acceptors of family welfare methods.

The purpose of extension of the post partum programme to sub-district hospitals is to provide the maternal and child health care services in rural and semi-urban areas so as to bring an overall improvement in the health status of the mother and the infants. A target of extending the programme to 400 sub-district hospitals during the Sixth Plan period was set. MTP facilities in semi-urban and rural areas are being provided under the programme.

A working group on re-organisation of family welfare and primary health care was constituted by Government for giving its recommendations for additional inputs for improving the out-reach system in urban slums. The state governments have to prepare the proposals for strengthening the out-reach system in specific urban slums as per the recommendations of the working group and to submit the same to the Central Family Welfare Department for further consideration.

This scheme provides immediate facilities for tubectomy operations in the hospitals where such cases could not be admitted due to lack of facilities. Under the scheme, beds are sanctioned to those medical institutions, hospitals which are run by voluntary organisations on the basis of their performance during the previous year. Beds are sanctioned to the voluntary institutions on the recommendations of the state governments and regional directors of health and family welfare of the respective states. Maintenance grant of Rs 2,400 per bed per annum is paid to each institution subject to the condition that a minimum of 45 tubectomies per bed per annum are performed. A total of 2,163 sterilisation beds are functioning under state govern-

ACCEPTORS OF FAMILY PLANNING METHODS



ment institutions, local bodies and voluntary organisations as on 31 March 1984.

The Government has evolved a scheme for renovation/remodelling IUD room into an operation theatre at the rural family welfare centre attached to primary health centres for providing improved facilities for sterilisation and MTP services to the population in rural areas. It is proposed to cover 833 primary health centres during the Sixth Plan period.

**otivation
d Education**

The family welfare programme in India depends on its voluntary acceptance by the people. To approach over 12 crore literate and illiterate couples in the reproductive age group, living in urban and remote rural areas, a broad-based mass education and motivation programme has been launched. The Mass Mailing Unit of the Department of Family Welfare disseminated information in the form of printed materials to various categories of opinion leaders through direct mail service. The list includes over 10 lakh addresses. In addition to this, the unit publishes two regular monthly journals—*Centre Calling* in English and *Hamara Ghar* in Hindi, and two quarterly publications—*Jan Swastha Rakshak* in Hindi and *E.P.I. Bulletin* in English. Total print order of these periodicals is well over two lakh per issue.

rea Project

Based on a model plan worked out by the Ministry of Health and Family Welfare, 63 districts of 14 states have been taken up for the intensive development of health and family welfare infrastructure and expansion of services under Area Projects with partial financial assistance of World Bank, United Nations Fund for Population Activities (UNFPA), Danish International Development Agency (DANIDA), United States Agency for International Development (USAID) and United Kingdom (UK). These projects are designed to increase and strengthen in about five years, facilities and manpower for delivery of health and family welfare services, in an integrated manner to reach a level that will ultimately be reached in the entire country over a longer period. These include information, education and communication activities including orientation training camps, mass media activities, including management training for staff, monitoring and evaluation and innovative activities. The ultimate objectives of the scheme are to reduce fertility and reduce maternal and child mortality and morbidity.

esearch and
valuation

Research activities continued in the field of demography and communication action through 16 population research centres in various states. Similarly, bio-medical research in the field of reproductive biology and fertility control is being done in the Indian Council of Medical Research, Central Drug Research Institute. All India Institute of Medical Sciences and National Institute of Health and Family Welfare.

9 SOCIAL WELFARE

Social welfare as an integral part of national development has its foundation in the Indian Constitution. The Constitution envisages the goal of a welfare state. It provides guidelines and directions to welfare endeavours. It is specifically stated in Article 38 that "the State shall strive to promote the welfare of the people by securing and protecting as effectively as it may a social order in which justice, social, economic and political, shall inform all the institutions of the national life". The Constitution also enjoins the state to ensure that the health and strength of workers, men and women, and the tender age of children are not abused and that citizens are not forced by economic necessity to enter avocations unsuited to their age and strength, and that "childhood and youth are protected against exploitation and against moral and material abandonment".

The social welfare services in over three decades of planning have sought the welfare and the development of children, women and the physically and socially handicapped of the society. Greater emphasis has been laid on the welfare of the women and children from the vulnerable sections of the community in rural and tribal areas and urban slums.

The increasing investment made through the different five year plans in the social welfare sector reflects the growing interest of the Government in providing welfare services to its citizens. The same is reflected in table 9.1.

ADMINISTRATIVE SET UP

The responsibility for implementation of welfare schemes rests with both the Centre and the state governments. The Centre is responsible for formulating welfare policies and programmes besides co-ordinating, guiding, and promoting the implementation of welfare services by states.

The work of the Ministry of Social Welfare is carried out through three Bureaux, namely, nutrition and child development; welfare of the handicapped and welfare and development of women and social defence. The Central Social Welfare Board, the National

TABLE 9.1
Plan Expenditure on Social Welfare

(*Rs in crore*)

Plan	Centre	States	Union Territories	Total
First Plan (1951-56)	1·60	—	—	1·60
Second Plan (1956-61)	8·49	4·95[1]	—	13·44
Third Plan (1961-66)	12·84	5·63	0·93	19·40
Annual Plans (1966-69)	7·76	3·20	0·60	11·56
Fourth Plan (1969-74)	65·71	9·67	1·43	76·81
Fifth Plan (1974-78)	43·52	13·60	1·72	58·84
Annual Plan (1978-79)	19·06	9·38	0·97	29·41
Annual Plan (1979-80)	17·82	12·23	0·84	30·89
Sixth Plan[2] (1980-85)	150·00	109·78	12·19	271·97

1. Combined for states and union territories.
2. Outlays.

Institute of Public Cooperation and Child Development, New Delhi, the National Institute of Social Defence, New Delhi and the national institutes of the handicapped assist the Ministry in its functions. Besides, the voluntary sector renders a great helping hand in carrying out the task .

The Bureau of Nutrition and Child Development is responsible for overall policy and coordination of child development, besides implementing child development programmes.

The Handicapped Welfare Bureau is concerned with the implementation of policies and programmes for the welfare of the handicapped. Special programmes for early detection, education, training and rehabilitation of the physically handicapped are the responsibility of the Bureau. National institutes have also been set up to conduct research and impart training in various aspects of disablement. The National Institute for the Visually Handicapped at Dehra Dun, the National Institute for the Orthopaedically Handicapped at Bombay, the National Institute for the Hearing Handicapped at Bombay, the Institute for the Physically Handicapped at New Delhi, the School for the Mentally Retarded Children at New Delhi and the Training Centre for the Deaf at Hyderabad, are under this Bureau. An Artificial Limbs Manufacturing Corporation is working at Kanpur to manufacture aids and appliances for the handicapped.

The Women's Welfare and Development Bureau is charged with the responsibility of coordinating women's welfare and development programmes. It undertakes programmes like providing assistance for construction of hostels for working women with day care facilities for children, setting up of training centres for women in distress, etc. This Bureau is responsible for implementation and co-ordination of various social defence programmes in the country.

WELFARE OF CHILDREN

The national policy for children adopted by the Government in August 1947 describes the country's children as a 'supremely important asset'. It enjoins on the state the responsibility for their nurture and solicitude.

There is a National Children's Board to provide a focus and forum to ensure continuous planning, review and co-ordination of all the essential services for the children. Similar boards have also been constituted in all states except Himachal Pradesh and the union territory of Chandigarh.

Integrated Child Development Services

Highest priority is being accorded to child welfare programmes in the Sixth Plan. The most important scheme in this field is the integrated child development services (ICDS) for children in the age group 0–6, nursing and expectant mothers etc. Under this scheme, a package of services consisting of supplementary nutrition, immunization, health check-up, referral services, nutrition and health education and non-formal pre-school education is provided. By the end of 1983-84 there were 822 such projects. Advance action has also been approved during the year under report for the installation of the remaining 183 projects, thereby making the total of 1,005 projects. Of these, 558 projects are in rural areas, 134 projects in urban slums and 313 projects are in tribal areas. Besides immunization to young children and pregnant mothers, these projects will provide supplementary nutrition to about 60 lakh beneficiaries and pre-school education to about 30 lakh children. Some states have also taken up additional projects in the state sector. About 112 ICDS projects have been taken up by the end of 1983-84 under state sector.

Services for Children in Need of Care and Protection

Providing care and protection to abandones, neglected, unwanted and destitute children is another important programme. The need for such a programme has arisen as a result of the breaking up of the traditional family system. Under the scheme, started in 1974-75, assistance is provided to voluntary organisations for residential care as well as foster care of destitute children.

Creches for Working and Ailing Mothers' Children

The scheme provides day care services for the children of working and ailing mothers in the age-group 0–5. The children are given sleeping facilities, day care services, supplementary nutrition, medicines, recreation and weekly health check-up by the doctors. The scheme implemented through the voluntary organisations made a modest beginning with 247 creches to cover about 5,000 children in 1974-75. It gained momentum to cover about 1,92,075 children in 7,683 creches during 1983-84.

Nutrition Programmes

The special nutrition programme, launched in 1970-71, provides supplementary nutrition to children below six years, expectant and nursing mothers in tribal and backward rural areas and urban slums. The present coverage under the programme is about one crore beneficiaries all over the country. Of these, about 43 lakh beneficiaries are covered under ICDS programme. The special nutrition programme is implemented partly with CARE and WFP Food.

Another nutrition programme is run through *balwadi*s and day care centres by voluntary organisations. Under this programme, children in the age group 3–6 are provided supplementary nutrition. About 2.29 lakh children are at present covered under this programme through 7,000 *balwadis*. In all supplementary nutrition programmes, health inputs and safe drinking water facilities are being progressively extended to maximise the impact.

National Awards

To encourage voluntary efforts, national awards have been instituted for outstanding work done in the field of child welfare, both for the individuals as well as for the organisations, commencing from 1979. The awards include cash prizes and citations.

National Children's Fund

A National Children's Fund was constituted during the International Year of the Child in 1979 to finance the activities of voluntary organisations for the welfare of children.

National Institute of Public Co-operation and Child Development

The National Institute of Public Cooperation and Child Development, New Delhi undertakes research, evaluation and training in the field of voluntary action and child development. Its programmes cover research on a wide range of problems and training of ICDS functionaries as well as senior personnel in social administration. The Institute has three field units one each at Guwahati, Bangalore and Lucknow.

Training Programmes

In order to make adequate number of trained personnel available to man the various social welfare programmes, a number of training programmes have been sponsored.

Training of ICDS functionaries is carried on at 324 *Anganwadi* Workers' Training Centres spread all over the country. Besides, there are about 20 training centres which impart training to middle level ICDS functionaries. At national level, the National Institute of Public Co-operation and Child Development and the National Institute of Social Defence provide in-service training to various social welfare personnel of senior level.

United Nation's Children's Fund

India has been associated with UNICEF since 1949. UNICEF has been providing assistance to India for programmes related to child welfare. India has progressively increased her contribution to UNICEF's general resources. It now stands at Rs 160 lakh. Since 1950, India has been a member of the UNICEF Executive Board, except for a year in 1961 and again for a year from 1 August 1977 to 31 July 1978.

WELFARE OF PHYSICALLY HANDICAPPED

According to a recent survey conducted by the National Sample Survey Organisation, it is estimated that there are about 1.20 crore disabled people in the country. Programmes are being implemented for the early detection and treatment, education, training and rehabilitation of disabled persons, namely, the blind, the deaf, the orthopaedically handicapped, the mentally retarded, spastics and the leprosy cured persons.

Blind

There are about 200 schools and training centres, for the blind in the country. At the national level, the National Institute for the Visually Handicapped, Dehra Dun, provides integrated services including a Model Secondary School for blind children attached to the Institute. The Institute has a training centre for the adult blind, a school for the partially sighted children, a workshop for the manufacture of Braille appliances, a sheltered workshop and the Central Braille Press. The National Library for the Blind, which forms part of the Institute, circulates Braille literature in the country. The teachers' training centres at Delhi, Bombay, Calcutta and Madras train 40 to 50 teachers for the blind annually.

Deaf

To provide integrated services at national level for the education, training and research for the hearing handicap, the Ali Yavar Jung National Institute for Hearing Handicapped has been set up at Bombay. The Training Centre for the Adult Deaf and the school for the partially deaf children at Hyderabad impart training in tailoring, sheet metal work, electrical wiremanship, carpentry, fitting, welding and photography.

Orthopaedically Handicapped

A National Institute for the Orthopaedically Handicapped has been set up in Calcutta. The institute concentrates on research and training of personnel for the rehabilitation of the orthopaedically handicapped.

The Institute for the Physically Handicapped, New Delhi trains physio-therapists and occupational therapists besides running a school for orthopaedically handicapped children.

Mentally Retarded

A model school for the mentally deficient children in the age group 6-15 is functioning in Delhi. The school provides training in a few crafts.

Scholarships

Scholarships are awarded to the blind, deaf and the orthopaedically handicapped students for general education and for technical and professional training. About 15,000 scholarships are awarded annually. The implementation of the scheme has since been decentralised.

Assistance for Purchase of Aids and Appliances

Under the scheme of assistance for purchase/fitting of aids and appliances launched during the International Year of the Disabled Persons, aids and appliances costing between Rs 25 and Rs 1,500 are provided free of cost to the persons whose income is less than Rs 750 per mensum and at half the cost to those whose income is between Rs 751 and Rs 1,500 per month. During 1983-84 grants-in-aid of Rs 120 lakh have been provided to 60 implementing agencies recognised for the purpose.

Rehabilitation Centres

A scheme of setting up of District Rehabilitation Centres on a pilot basis was launched by the Government during 1982-83. The scheme envisages comprehensive services for prevention and early detection of disabilities and economic rehabilitation of the disabled within the community. The scheme will predominantly benefit the rural disabled. Four District Rehabilitation Centres—one each in Orissa, Maharashtra, West Bengal and Karnataka have been established.

Assistance to Voluntary Organisations

Financial assistance up to 90 per cent of the total cost of the projects is being extended to voluntary organisations for providing welfare services for the disabled. About 150 organisations are being assisted under this scheme.

Integrated Education

In pursuance of the national policy on education, a scheme of integrated education has been evolved to place handicapped children in ordinary schools. States are given cent per cent assistance to run the scheme.

Special Employment Exchanges

The special employment exchanges and special cells in normal employment exchanges endeavour the placement of handicapped persons into gainful employment. So far, about 35,000 handicapped persons were placed in jobs through the existing 22 special employment exchanges and 31 special cells spread all over the country.

Petrol Subsidy Scheme

Under the petrol subsidy scheme, 50 per cent of the cost of petrol|diesel purchased by the handicapped owners of motorised vehicles subject to certain ceilings, is reimbursed to all handicapped persons whose income is less than Rs 2,000 per month.

National Awards

Every year, the President of India presents national awards to outstanding employers of the handicapped and to the most efficient handicapped employees|self-employed persons from Government and private sectors, local bodies, public sector undertakings, corporations and placement officers of the handicapped. The national award for the best work done in a year for the disabled was instituted in 1982 as a state recognition of voluntary action for the cause of the disabled. The awards consist of a citation, a certificate and a cash prize of Rs 20,000 for an individual and Rs 1,00,000 to an institution.

Manufacture of Aids and Appliances

Artificial Limbs Manufacturing Corporation of India (ALIMCO), Kanpur, a government company, manufactures prosthetic and orthotic aids and other appliances to meet the requirements of the disabled personnel and other handicapped. The National Institute for Prosthetic and Orthotic Training (NIPOT) set up under ALIMCO imparts training to orthopaedic surgeons, doctors, orthotic and prosthetic technicians and other rehabilitation personnel.

Reservation in Services

To encourage employment of the handicapped 3 per cent of Group C and D posts are reserved in Central services and public sector undertakings for the physically handicapped.

National Handicapped Welfare Fund

Government have set up a National Handicapped Welfare Fund, a fund with voluntary contributions from public sector, private sector and general public at large. The fund will be utilised to augment the existing voluntary sector services for the welfare of the handicapped.

National Council for Handicapped Welfare

A National Council for Handicapped Welfare has been set up as an advisory body for the formulation of policies and programmes for the handicapped in the country.

WELFARE OF WOMEN

The national plan of action for women introduced in 1976 provides guidelines in formulating policies and programmes for the welfare and development of women in the country. To keep a watch on the implementation of policies and programmes for women, a national committee, a steering committee and an inter-departmental co-ordination committee were set up.

Functional Literacy for Adult Women

The scheme of functional literacy for adult women in the age group 15–45 was started in 1975-76. It offers non-formal education covering health and hygiene, food and nutrition, home management and child care in 620 ICDS project areas.

Hostels for Working Women

In order to encourage women to take up work outside their habitat, a scheme to provide grants-in-aid to voluntary organisations for construction|expansion of hostel building was started in 1972 to make available cheap and safe accommodation to working women from low income group. The scheme was modified in 1982-83 to cover assistance for separate hostels for working women with children upto 8 years. The scheme now covers purchase of buildings also for starting working girls hostels by the implementing agencies. Financial assistance under this scheme is given to registered voluntary organisations working in the field of women welfare on a cost sharing basis, the Government providing 75 per cent of the total estimated cost of construction. Since the inception of the scheme in 1972-73, 335 hostels have been sanctioned to provide accommodation to about 22,000 working women.

Training Courses for Rehabilitation of Women

A scheme for setting up rehabilitation centres with the object of training destitute women in the age group 18-50 in marketable skills was started in 1977. During the period of training, the women and their dependent children are provided residential facilities and care. The scheme is implemented through voluntary organisations, rural agencies which are given 90 per cent assistance for the purpose.

Employment and Income-Generating Production Units

This programme was started in 1982-83 for setting up projects aimed at income-generation and employment on a sustained basis to needy women. Assistance under this programme is given to public sector undertakings and autonomous organisations for the training component of their projects. Beneficiaries include rural poor women, women from weaker sections belonging to scheduled castes and scheduled tribes, war-widows and widows of employees of the implementing organisations.

Socio-Economic Programme for Women

In order to provide opportunities of work wage to needy women on a full time basis, a socio-economic programme was initiated in 1958 by the Central Social Welfare Board. The programme is gaining momentum and in future agro-based and self-employment schemes are proposed to be promoted to a larger degree. At present, about 5,300 units are being assisted to benefit about 64,000 women.

Vocational Training for Adult Women

To open new vistas of employment to needy women and also to create a band of competent trained workers such as primary school teachers, *balsevikas,* nurses, health visitors, mid-wives and family planning workers, particularly in rural areas, the scheme of condensed courses of education was started by the Central Social Welfare Board. Since the inception of the scheme in 1958, about 7,300 courses benefitting 1,64,000 women have been sanctioned till March 1984.

Other Programmes

There are a number of other programmes for women being operated by the Central Social Welfare Board, state governments and voluntary organisations. Important among these are assistance to local village level women's organisations (*mahila mandals*), vocational training centres, rehabilitation centres, homes for destitute women, women's development centres in colleges, various publicity programme, etc. Some states have started women's development corporations to promote and assist economic activities by women. A number of voluntary organisations are actively engaged in mobilising public opinion and support to eradicate evil practices like early marriage, dowry system, withdrawing girls from schools, etc.

Legislative Measures

In pursuance of the recommendations of the Committee on the Status of Women in India, the Government accepted the principle of divorce by mutual consent and the Hindu Marriage Law was amended to that effect. Cruelty and desertion were added as grounds for divorce. Taking and giving of dowry were declared as violation of government servant's conduct rules for Central Government employees. States were also advised to take similar action.

The Equal Remuneration Act, 1976 provides for equal remuneration to men and women workers and prevention of discrimination against women in the matter of employment. The Hindu Marriage Act, 1955 and the Special Marriage Act, 1954 were amended by the Marriage Laws Amendment Act, 1976 to provide the right for a girl to repudiate before attaining majority, her marriage as a child, whether the marriage has been consummated or not.

The Child Marriage Restraint (Amendment) Act, 1978 raised the age of marriage for girls from 15 to 18 and for boys from 18 to 21. The offences under this Act has been made cognizable. The Factories (Amendment) Act, 1976 provided for establishment of creches where 30 women are employed (including casual labourers or contract labourers) as against 1 for every 50 previously. The Maternity Benefits Act, 1961 was amended in April 1976 to cover women, who do not fall within the purview of the Employees' State Insurance Act, 1948. Two criminal law amendment bills were passed by the Parliament in 1983, which amended the Indian Penal Code, Indian Evidence Act and the Criminal Procedure Code to make off once of rapes and such other crimes against women much more stringent and effective and also to make a new provision in the Indian Penal Code to make cruelty against women by the husband and other relations punishable.

SOCIAL DEFENCE

Problems of social disorganization emerging in the wake of industrialisation and urbanisation are manifest in the form of juvenile delinquency, drug addiction, alcoholism, crime of various types, immoral traffic in women and girls, etc. In order to control these problems of personal and social deviance, programmes of social defence have been launched by the state governments mainly within the framework of specific legislations and allied measures.

Delinquency Control

The programmes for the prevention and control of juvenile delinquency centre around the implementation of the children acts in various states and union territories. The Children Act, 1960 passed by Parliament for union territories, is cited as a model legislation in this field. All the states except Nagaland have enacted their children acts which provide a specialised approach towards the care, protection, maintenance, training and rehabilitation of delinquent children. The institutional infrastructure consists of juvenile|children's courts, child welfare boards, remand/observation homes, special/certified/approved schools, children homes and aftercare facilities.

Prison Welfare

Prison welfare and administration constitute a major area of social defence. While the management of prisons and allied institutions fall within the purview of state governments and union territory administrations, a variety of measures have been initiated to strengthen the welfare content of prison programmes. A scheme for the appointment of welfare officers in prisons and the establishment of creches for the children of women prisoners, as initiated during the Second Plan, is being implemented. The welfare officers look after the individual problems of prisoners and mobilise resources for their rehabilitation and reintegration into the community.

Probation and Allied Measures

The services in this field are being progressively developed within the framework of the Probation of Offenders Act, 1958. The Act contains systematic provisions for probation in respect of various categories of offenders under specified circumstances. It lays down a special stress on the use of probation in lieu of imprisonment for youthful offenders below 21 years. The probation officers, as appointed under the Act, conduct social investigation on offenders for consideration by the courts. They also supervise cases as placed under them. Side by side voluntary organisations provide financial and other assistance to those released on probation.

Suppression of Immoral Traffic

The Indian Constitution prohibits traffic in human beings. The Suppression of Immoral Traffic in Women and Girls Act, 1956 bans prostitution in its commercialised form as an organised means of living and inhabits prostitution in notified areas. It is a central legislation applicable to the whole of the country. The Act empowers the state governments to make rules for its proper implementation. Under the Act, women and girls rescued from brothels are sent to protective homes or corrective institutions established for their care, treatment and rehabilitation. The Act was suitably amended in 1978 in the light of the experience gained in its implementation.

A scheme for the setting up of short stay homes for women in moral danger has been initiated by the Central Government.

Beggary Prevention

Apart from the provisions of the substantive law against kidnapping, abduction and maiming of children for the purposes of begging fifteen states and two union territories have implemented special laws against begging. Besides, municipal and police Acts also provide for measures against begging. Government is considering the formulation of a uniform legislation on beggary for union territories.

Prohibition and Drug Abuse

Article 47 of the Constitution enjoins that the State shall endeavour to bring about prohibition of the consumption, except for medicinal purposes, of intoxicating drinks and drugs which are injurious to health. The responsibility for fulfiling the Constitutional obligations in regard to prohibition rests largely with state governments. However, a Central Prohibition Committee, set up by the Government, reviews the progress of prohibition in states and union territories and suggests ways and means to achieve this goal. The Central Government has also issued guidelines for the enforcement of prohibition policy. A number of voluntary organisations are being financially assisted to undertake programmes for the enforcement of prohibition policy. The Government has been continuously making efforts through voluntary organisations to educate people about the evils of drinking and drug abuse. Publicity through mass communication media is also carried out to educate the masses. To enlighten the student community about the ill effects of drinking and drug abuse, the Ministry has sponsored essay and debate competitions at University level with grants-in-aid from the Ministry of Social Welfare.

National Institute of Social Defence

The National Institute of Social Defence functions as the central advisory body for the coordination, standardisation and development of social defence programmes in the country. To achieve these, the Institute undertakes research on social defence, compiles and analyse statistics on social defence, promotes training|orientation in the field of social defence, helps draft model legislation and rules in the field of social defence. It also advises the Central and State governments| union territory administrations on various aspects of social defence development.

Welfare Services for the Aged

Although the care of the aged is generally the responsibility of their kith and kin, yet force of circumstances sometimes leave old people without any means of support. Only a very small percentage is currently covered by pension, gratuity, etc. Therefore, all state governments and union territories except Arunachal Pradesh have started schemes of cash assistance to eligible old people who are without any means of support. Homes for the aged and other services to assist the aged in their own homes have been started both by government and voluntary organisations. Under the general scheme of grant-in-aid to voluntary organisations, financial assistance is extended for services to the elderly in the areas of employment generation, health care, recreation, etc.

Research and Evaluation

Research and evaluation studies are being sponsored since 1973-74 in the fields of social welfare, social policy and social development through a scheme of grants-in-aid for research and publications. Under this, universities|research institutions|professional bodies are given grants to meet the cost of the research project according to the approved norms.

SCHEDULED CASTES AND SCHEDULED TRIBES

The scheduled castes and scheduled tribes have been specified by 15 Presidential orders issued under the provisions of Article 341 and 342 of the Constitution. According to the 1981 census, about 23.51 per cent of the country's population comprised the scheduled castes and the scheduled tribes. In addition, some state governments have also specified other categories of people known as the "other backward classes" and denotified nomadic and semi-nomadic communities.

While the Constitution has prescribed certain protective measures and safeguards for these classes, the successive five year plans have regarded their progress as a major objective of national policy.

CONSTITUTIONAL SAFE GUARDS

The Constitution prescribe protection and safeguards for the scheduled castes and scheduled tribes, and other weaker sections either specially or by way of insisting on their general rights as citizens with the object of promoting their educational and economic interests and of removing the social disabilities. The main safeguards are :

(i) the abolition of 'untouchability' and the forbidding of its practice in any form (Art. 17);

(ii) the promotion of their educational and economic interests and their protection from social injustice and all forms of exploitation (Art. 46);

(iii) the throwing open by law of Hindu religious institutions of a public character to all classes and sections of Hindus (Art. 25b);

(iv) the removal of any disability, liability, restriction or condition with regard to access to shops, public restaurants, hotels and places of public entertainment or the use of wells, tanks, bathing ghats, roads and places of public resort maintained wholly or partially out of state funds or dedicated to the use of the general public [Art. 15(2)];

(v) the curtailment by law in the interest of any scheduled tribe, of the general rights of all citizens to move freely, settle in, and acquire property [Art. 19(5)];

(vi) the forbidding or any denial of admission to educational institutions maintained by the state or receiving aid out of state funds [Art. 29(2)];

(vii) permitting the state to make reservation for the backward classes in public services in case of inadequate representations and requiring the state to consider the claims of the scheduled castes and scheduled tribes in the making of appointments to public services (Arts. 16 and 335);

(viii) special representation in the Lok Sabha and the state vidhan sabhas to scheduled castes and tribes till 25 January 1990 (Arts. 330, 332 and 334);

(ix) the setting up of tribes advisory councils and separate departments in the states and the appointment of a special officer at the centre to promote their welfare and safeguard their interests (Arts. 164 and 338 and Fifth Schedule);

(x) Special provision for the administration and control of scheduled and tribal areas (Art. 244 and Fifth and Sixth Schedules); and

(xi) prohibition of traffic in human beings and forced labour (Art. 23).

Legislation against Untouchability

For enlarging the scope and making the penal provision more stringent, the Untouchability (Offences) Act, 1955 had been comprehensively amended by the Untouchability (Offences) Amendment and Miscellaneous Provisions Act, 1976, which came into force from 19 November 1976. With this amendment, the name of the principal Act has been changed to the Protection of Civil Rights Act, 1955. The Act provides penalties for preventing a person, on the ground of untouchability from enjoying the rights accruing out of abolition of untouchability. Enhanced penalties|punishment have also been provided for subsequent offences.

Under the provision of Section 8 of the Representation of the People Act, 1951, a person who is convicted of an offence under the Act is disqualified from contesting elections to Parliament and state legislatures for a period of six years commencing from the date of such conviction.

The Protection of Civil Rights Act, 1955, is administered by the state governments also from time to time. Under a provision in the Act, the Government also lays, every year, before each House of Parliament an annual report on the working of the provisions of Section 15A of the Act.

Protection of Civil Rights Act

In pursuance of the provisions made under Section 15A of the Protection of Civil Rights Act, central assistance is given to the state governments and union territories. Provisions for legal aid to the scheduled caste victims of Protection of Civil Rights cases have been made by 18 states. Special cells/squads have been created by 17 states for initiating and exercising supervision over prosecution for contravention of the provisions of the PCR Act. By December 1982, 18 states had set up committees at various levels to make periodical review of the problems of untouchability and cases related to it and suggest various measures for the effective implementation of the PCR Act. Necessary guidelines and instructions are issued to states from time to time for effective implementation of the provisions of PCR Act Matching central assistance is provided to the states under the centrally sponsored scheme for implementation of PCR Act. Liberation of scavengers by conversion of existing dry-latrines has also been taken up under the centrally sponsored scheme of implementation of PCR Act. Ten states have so far been assisted under the scheme for selected towns on 'whole town approach' with the conditions for providing alternative employment to the liberated scavengers. In Bihar, the towns of Biharsharif, Purnia, Chaibasa, Madhubani and Daltonganj with central assistance and Ranchi, Saharsa and Deoghar with state funds have been made scavenging free and/the dry-latrines in these towns have been converted into water-borne ones. The work in selected towns of other states is in progress.

REPRESENTATION IN LEGISLATURES

Under Articles 330 and 332 of the Constitution, seats are reserved for scheduled castes and scheduled tribes in the Lok Sabha and state vidhan sabhas in proportion to their population. This concession was initially for a period of 10 years from the commencement of the Constitution but has been extended, through amendments up to 25 January 1990. Parliamentary Acts provide for such reservations in the union territories having legislatures. There is no reservation of seats in Rajya Sabha and state vidhan parishads. Table 9.2 gives details of their representation in the Lok Sabha and state vidhan sabhas.

Following the introduction of *panchayati raj,* safeguards have been provided for proper representation of the members of the scheduled castes and tribes by reserving seats for them in the *gram panchayats* and other local bodies.

Reservation in Services

Article 335 of the Constitution provides that the claims of the members of scheduled castes and scheduled tribes shall be taken into consideration, consistent with the maintenance of efficiency of administration, in making appointment to posts and services, in connection with the affairs of the union or of a state. Article 16(4) permits reservation in favour of citizens of backward classes, who may not be adequately represented in services. In pursuance of these provisions, the Government has made reservations for scheduled castes and scheduled tribes in the services under their control.

TABLE 9.2
RESERVATION OF SEATS IN LEGISLATURES

State/Union Territory	LOK SABHA			VIDHAN SABHA		
	Total Number of Seats	Seats reserved for scheduled castes	Seats reserved for scheduled tribes	Total Number of Seats	Seats reserved for scheduled castes	Seats reserved for scheduled tribes
STATES						
Andhra Pradesh	42	6	2	294	39	15
Assam	14	1	2	126	8	16[1]
Bihar	54	8	5	324	48	28
Gujarat	26	2	4	182	13	26
Haryana	10	2	—	90	17	—
Himachal Pradesh	4	1	—	68	16	3
Jammu and Kashmir	6	—	—	76[2]	6	—
Karnataka	28	4	—	224	33	2
Kerala	20	2	—	140	13	1
Madhya Pradesh	40	6	9	320	44	75
Maharashtra	48	3	4	288	18	22
Manipur	2	—	1	60	1	19
Meghalaya[3]	2	—	—	60	—	—
Nagaland[3]	1	—	—	60	—	—
Orissa	21	3	5	147	22	34
Punjab	13	3	—	117	29	—
Rajasthan	25	4	3	200	33	24
Sikkim	1	—	—	32	2	12[4]
Tamil Nadu	39	7	—	234	42	3
Tripura	2	—	1	60	7	17
Uttar Pradesh	85	18	—	425	92	1
West Bengal	42	8	2	294	59	17
UNION TERRITORIES						
Andamans and Nicobar Islands	1	—	—	—	—	—
Arunachal Pradesh[3]	2	—	—	30	—	—
Chandigarh	1	—	—	—	—	—
Dadra and Nagar Haveli	1	—	1	—	—	—
Delhi[5]	7	1	—	56	9	—
Goa, Daman and Diu	2	—	—	30	1	—
Lakshadweep	1	—	1	—	—	—
Mizoram[3]	1	—	—	30	—	—
Pondicherry	1	—	—	30	5	—
TOTAL	542	79	40	3,997	557	315[6]

NOTE :

1. Four seats are reserved for two autonomous districts (North Cachar Hills and Mikir Hills).
2. Excluding 24 seats in the territory held by Pakistan.
3. No reservation has been made.
4. Reserved for Sikkimese of Bhutia-Lepcha origin.
5. Metropolitan Council.
6. Includes 12 seats reserved for Sikkimese of Bhutia-Lepcha origin.

For the scheduled castes, reservation is 15 per cent of the vacancies for which recruitment is made by open competition on an all India basis and 16-2/3 per cent of the vacancies to which recruitment is made on all India basis otherwise than by open competition. For the scheduled tribes, the reservation is 7.5 per cent in both cases. Reservation in direct recruitment to Group C and D posts, which normally attract candidates from a locality or region, is fixed in proportion to the population of the scheduled castes and tribes in the respective states and union territories.

Reservation is also made at 15 per cent of the vacancies for the scheduled castes and 7.5 per cent for the scheduled tribes in promotions on the result of the competitive examinations limited to departmental candidates in Group B, C and D and in promotion by selection in Group B, C and D and to the lowest rung of Group A in grades or services to which direct recruitment, if any, does not exceed 66-2/3 per cent. Reservation has been provided for scheduled castes and scheduled tribes in promotion on the basis of seniority subject to fitness in Group A, B C and D posts in grades or services to which direct recruitment, if any, does not exceed 66-2/3 per cent.

In promotions, by selection within Group A to posts carrying an ultimate salary of Rs 2,250 per month or less, the scheduled castes and tribes officers, who are senior enough in the zone of consideration for promotion and are within the number of vacancies for which the select list has to be drawn, are included in that list provided they are not considered unfit for promotion.

To facilitate their adequate representation, concessions such as (i) relaxation of age limit, (ii) relaxation in the standard of suitability, (iii) selection, provided they are not found unfit for the posts, (iv) relaxation of the qualification regarding experience in the case of direct recruitment only, wherever necessary, and (v) inclusion of scientific and technical posts upto the lowest grade of Group A required for research, in the scheme of reservations, have been provided for. Simultaneously, with notification to employment exchanges or advertisements in newspapers, vacancies reserved for scheduled castes and scheduled tribes in Group C and D (Class III and IV) posts are announced over the stations of All India Radio located in areas having concentration of scheduled castes and scheduled tribes population, notified to the voluntary associations of scheduled castes and scheduled tribes enlisted for this purpose and to the Directors of SC/ST Welfare of the states and union territories. Vacancies filled through the Union Public Service Commission otherwise than through examination, are advertised on the first occasion exclusively reserved for scheduled castes/scheduled tribes and are readvertised if the first advertisement is infructuous. After the second advertisement, other community candidates can also be considered, if no scheduled caste|tribe candidates still become available. Reservations for scheduled castes and scheduled tribes (including vacancies carried forward) is subject to the ceiling of 50 per cent of the total number of vacancies. The scheme of reservations is also being followed by the public sector undertakings. The voluntary agencies, which are in receipt of substantial grants-in-aid from the Government, are also required, as a condition, to adopt certain specific features of the reservation scheme in their establishments.

To give effect to the reservations, model rosters of 40 points each have been prescribed for direct recruitment by open competition on all

India basis and otherwise than open competition and promotions and 100 point roster for recruitment made on local and regional basis. If the vacancies in a service or cadre are too few for the purpose, all isolated posts are grouped together in direct recruitment. Annual statements are required to be submitted by the recruiting authorities for scrutiny by the Government. For ensuring implementation of the special representation orders, liaison officers have been appointed in different ministeries of the Union Government.

State governments have also framed rules under the power given to them by item 41 of the State list of the Seventh Schedule to the Constitution for the reservation of posts for these classes and taken steps to increase their representation in the state services. Reservation in state government services, however, is under the exclusive jurisdiction of the state governments.

The representation of scheduled castes and scheduled tribes in Central Government services as on 1 January 1982 is given in table 9.3.

TABLE 9.3
SC|ST REPRESENTATION IN CENTRAL GOVERNMENT

Group (Class)	Total No. of Employees	Scheduled Castes	Percentage of Scheduled Castes to Total	Scheduled Tribes	Percentage of Scheduled Tribes to Total
A (Class I)	54,265	2,980	5·49	633	1·17
B (Class II)	66,221	5,970	9·02	947	1·43
C (Class III)	19,09,805	2,55,730	13·39	66,278	3·47
D (Class IV) (excluding sweepers)	10,94,569	2,56,261	23·41	81,496	7·45
TOTAL	31,24,860	5,20,941	16·67	1,49,354	4·78

ALL INDIA SERVICES (AS ON 1 JANUARY 1982)

IAS	4,138	417	10·1	224	5·4
IPS	2,184	219	10·02	77	3·52

ADMINISTRATION OF SCHEDULED AND TRIBAL AREAS

Some areas have been scheduled in Andhra Pradesh, Bihar, Gujarat, Himachal Pradesh, Madhya Pradesh, Maharashtra, Orissa and Rajasthan under Article 244 and the Fifth Schedule to the Constitution. Governors of the respective states submit a report annually to the President on the administration of the scheduled areas in their states.

The tribal areas in Assam, Meghalaya and Mizoram are administered subject to the provisions of the Sixth Schedule to the Constitution. Under the schedule, they are divided into autonomous districts. There are eight such districts, namely. North Cachar Hills and Mikir Hills districts in Assam, United Khasi-Jaintia Hills, Jowai and Garo Hills districts in Meghalaya and Chakma, Lakher and Pawi districts in Mizoram. Each autonomous district has a district council consisting of not more than 30 members of whom not more than four can be nominated and the rest to be elected on the basis of adult suffrage. The councils are vested with certain administrative, legislative and judicial powers.

elfare and
dvisory
gencies

The Ministry of Home Affairs is the nodal Ministry for overall policy, planning and coordination of programmes of development for scheduled castes and scheduled tribes. Each Central ministry and department is the nodal ministry or department concerning its sector. The Ministry of Home Affairs maintains liaison with state governments and Central ministries.

A commission for the scheduled castes and scheduled tribes consisting of a chairman and four members including the special officer appointed under Article 338 of the Constitution known as the Commissioner for Scheduled Castes and Scheduled Tribes, was set up in August 1978. The Commission is to investigate all matters relating to Constitutional safeguards, reservation in public services, to study the implementation of the Protection of Civil Rights Act, 1955, with particular reference to the objective of removal of untouchability and invidious discrimination arising therefrom, and to ascertain the socio-economic and other relevant circumstances responsible for the commission of offences against persons belonging to scheduled castes and tribes with a view to recommend appropriate remedial measures.

Parliamentary
Committee

Government had set up three Parliamentary committees, the first in 1968, the second in 1971 and the third in 1973, to examine the implementation of the Constitutional safeguards for the welfare of the scheduled castes and scheduled tribes. The committee has since been constituted as a standing committee of Parliament, the tenure of the members being one year.

Welfare
Departments
n States

The state governments and union territory administrations have separate departments to look after the welfare of the scheduled castes and scheduled tribes and other backward classes. The administrative set-up varies from state to state. In Bihar, Madhya Pradesh and Orissa separate ministers have been appointed to look after tribal welfare as prescribed in Article 164 of the Constitution. Some other states have set up committees of members of state legislatures on the pattern of the Parliamentary committee at the Centre.

All the states having scheduled areas as also Tamil Nadu and West Bengal have constituted tribes advisory councils as per provision in the Fifth Schedule to the Constitution to advise on such matters pertaining to the welfare and advancement of the scheduled tribes in the state.

Voluntary
Organisations

A number of voluntary organisations also promote the welfare of the scheduled castes and scheduled tribes. Important organisations of all-India character are : Harijan Sevak Sangh, Delhi; Bharatiya Depressed Classes League, New Delhi; Ishwar Saran Ashram, Allahabad; Indian Red Cross Society, New Delhi; Hind Sweepers Sevak Samaj, New Delhi; Ramakrishnan Mission, Narendrapur, West Bengal; Bharatiya Adimjati Sevak Sangh, New Delhi; Andhra Rashtra Adimjati Sevak Sangh, Nellore, Ramakrishna Mission, Cheerapunji, Ranchi, Puri, Silchar and Shillong; Thakkar Bapa Ashram, Numakhandi, Orissa; Servants of India Society, Pune; and Social Work and Research Centre, Tilonia, Rajasthan.

Government provides grants-in-aid to non-official voluntary organisations working among scheduled castes and scheduled tribes.

WELFARE SCHEMES

The welfare of scheduled castes and scheduled tribes is given special attention by both the Central and state governments. Special programmes for their welfare have been undertaken in the successive five year plans and the size of investment on these special programmes has been increasing from plan to plan as shown in table 9.4.

TABLE 9.4 EXPENDITURE DURING THE PLANS

(*Rs in crore*)

	Period	Outlay	Expenditure
First Plan	1951-56		30·04
Second Plan	1956-61		79·41
Third Plan	1961-66		100·40
Annual Plans	1966-69		68·50
Fourth Plan	1969-74		172·70
Fifth Plan	1974-78		296·19
Sixth Plan	1980-85		
(i) Central Sector		240·00	
(ii) State Sector		720·00	
(iii) Special central assistance for sub-plans for tribal areas		470·00	
(iv) Special central assistance for component plans for the development of scheduled castes		600·00	

In addition, state governments have also been spending a sizeable amount from their non-plan budgets on the welfare of these classes.

PLAN PROGRAMMES

Some of the important Centrally-sponsored schemes are :

Coaching and Allied Scheme

With a view to improving the representation of scheduled castes and scheduled tribes in various posts and services under Central|state governments and public sector undertakings, bank services, Life|General Insurance Corporation of India, pre-examination coaching centres have been set-up in various parts of the country for preparing scheduled caste and scheduled tribe candidates for various competitive examinations held by UPSC, State Public Service Commissions and other recruiting bodies. The number of such centres sanctioned|established by the end of March 1983 was over 62.

Post-Matric Scholarships

The scheme of post-matric scholarships to scheduled castes and scheduled tribes was started in 1944-45 with the objective of providing financial assistance to the scheduled caste and scheduled tribe students studying at post matriculation stages in different schools and colleges in the country, so as to enable them to complete their education. Starting with a mere 114 awards to scheduled caste students in 1944-45 and 89 for scheduled tribes in 1948-49, the years of inception of the scheme for the two categories, the estimated number of awards to scheduled castes and scheduled tribes had reached 4.90 lakhs in 1979-80, 5.65 lakhs in 1980-81, 6.55 lakhs in 1981-82, 7.78 lakhs in 1982-83 and 8.64 lakhs approximately in 1983-84. Keeping in view the rising cost of living and other factors, the rates for all courses and the income limits of parents|guardians|wards for eligibility of the scholarships have also been revised with effect from 1 July 1981. From 1980-81, the employed students with a total income of Rs 750 per month are made eligible for the scholarships, restricted to reimbursement of compulsory non-refundable dues|fees, etc. Restrictive condition of scholarships to only two children of the same parents has also been relaxed in favour of girl students from 1980-81.

Girls' Hostels Financial assistance is given to state and union territory administrations for the construction of new hostels and to expand existing ones at any place where the facilities for girls belonging to these classes are inadequate.

Research and Training The Government provide cent per cent financial assistance to reputed and competent organisations|institutions to undertake short duration, action-oriented studies on problems relating to the formulation, implementation and evaluation of programmes for economic, social and educational development of scheduled castes. The emphasis in such studies, however, is on the economic problems of these communities.

Book Bank Scheme The scheme is for scheduled caste and scheduled tribe students studying in medical-engineering degree courses in the country so as to provide text-books to those who can ill-afford expensive education without state support.

Pre-Matric Scholarships This scheme, started in 1977-78, is intended for the educational development of children who are engaged in the so-called 'unclean occupations, *viz.*, scavenging of dry latrines, tanning and flying, studying in classes VI to X. A scholarship of Rs 145 per month is given to each student under the scheme.

STRATEGY FOR DEVELOPMENT OF SCHEDULED CASTES

A three-pronged strategy has been evolved to speed up the development of the scheduled castes : (a) special component plans of the states and central ministries; (b) special central assistance to the special component plans for the scheduled castes of the states; and (c) scheduled castes development corporations in the states.

The special component plans envisage identification of schemes under general sectors of development which would be of benefit to the scheduled castes, quantification of funds from all divisible programmes under each sector and determination of specific targets as to the number of families which are to be benefited from these programmes under each sector. The overall objective is to assist scheduled caste families to substantially improve their incomes. The provision of basic services and facilities and of access to opportunities for social and educational development are also to be brought into the special component plans.

During the Sixth Plan period, an amount of Rs 4,481.91 crore was earmarked for special component plan. This allocation was made out of the total plan outlay of Rs. 46,831.30 crore. The 1982-83 plan allocation in this sector was Rs 675.78 crore against the total plan outlay of Rs 9,445.49 crore and in the following year the allocation had gone up to Rs 754.86 crore out of the total plan outlay of Rs 11,120.80 crore.

SPECIAL CENTRAL ASSISTANCE

The Central Government provides special central assistance to the state special component plans for the scheduled castes. The special central assistance is an additive to the state plan and programmes for scheduled castes and it does not follow the systematic pattern for special schemes. It is meant for the totality of the State efforts for the development of the scheduled castes. The additionality, according to the states, from the assistance is to be used by them only for income-generating economic development schemes in conjunction with the outlays in their special component plans so as to assist the economic advancement of the maximum possible number of scheduled caste families below the poverty line. The assistance is apportioned among the state governments and union territories taking into account facts like scheduled caste population, backwardness of the states and efforts of the state governments.

The special central assistance has helped in motivating the state governments to put in larger outlays in their special component plans as would be seen from the table 9.5.

TABLE 9.5
CENTRAL ASSISTANCE

(*Rs in crore*)

Year	State Plan Outlay	SCP Outlay	Percentage	Special Central Assistance
1979-80	5,967·03	240·54	4·03	5
1980-81	7,140·31	547·84	7·67	100
1981-82	8,229·31	632·76	7·69	110
1982-83	9,445·49	675·76	7·15	120
1983-84	11,120·80	754·86	6·79	130

Against the allocation of Rs 600 crore, SCA to the SCPs during the Sixth Plan, Rs 100 crore, Rs 110 crore, Rs 120 crore and Rs 130 crore were released during 1980-81, 1981-82, 1982-83 and 1983-84 respectively.

SCHEDULED CASTES DEVELOPMENT CORPORATION

The scheduled castes development corporations in the states are envisaged to interface between scheduled caste families and financial institutions in respect of bankable schemes of economic development. The corporations provide margin money loan-assistance to these families, thereby helping to increase the flow of funds from financial institutions to scheduled caste families.

These corporations have been set up in 17 states. Grants are given by the Central Government to the state governments for investment in the share capital of the corporation in the ratio of 49 : 51. The table 9.6 shows the releases made so far.

TABLE 9.6
GRANTS FOR SCHEDULED CASTES DEVELOPMENT CORPORATION

(*Rs in lakh*)

Year	State Government contribution	Amount released by the Centre
1978-79	710·55	50·00
1979-80	703·16	1,224·00
1980-81	1,403·00	1,300·97
1981-82	1,367·56	1,332·87
1982-83	1,364·40	1,350·00
1983-84	1,759·93	1,400·00

Based on the experience gained by these corporations and suggestions received from the state governments|central ministries, certain modifications were effected in the scheme during 1981-82. The corporations can now provide margin money loan-assistance for schemes with total non-recurring cost upto Rs 12,000 as against the earlier ceiling of Rs 6,000. The state governments are now eligible for grants-in-aid on a matching basis, for promotional activities, for the staff of the corporations for loan recovery/monitoring/evaluation/ technical wings subject to a ceiling of a certain percentage of the cumulative central assistance.

TRIBAL DEVELOPMENT

In the Fifth Plan, a new strategy for tribal development was evolved. Areas having 50 or more than 50 per cent of tribal concentration were delineated and tribal sub-plans prepared in 19 states and union territories, namely, Andhra Pradesh, Assam, Bihar, Gujarat, Himachal Pradesh, Karnataka, Kerala, Madhya Pradesh, Maharashtra, Manipur, Orissa, Rajasthan, Tamil Nadu, Tripura, Uttar Pradesh, West Bengal, Andaman and Nicobar Islands and Goa, Daman and Diu. Tribal sub-plan areas were delineated in Sikkim in August 1980. The states and union territories with predominant tribal population namely, Arunachal Pradesh, Meghalaya, Mizoram, Nagaland and Lakshadweep and Dadra and Nagar Haveli were not included in the tribal sub-plan approach as their state plans are, in fact, plans for the development of the tribal people.

The broad objectives of the tribal sub-plan are : (i) to narrow the gap between the levels of development of tribal areas and other areas, and (ii) to improve the quality of life of the tribal communities.

In order to achieve these objectives, elimination of all forms of exploitation of tribals particularly in land, money-lending, malpractices in the exchange of agricultural and forest produce was given high priority. The tribal sub-plans envisaged total physical and financial efforts for integrated development of the tribal areas. The investment in the sub-plan area flows from the state plan, central outlays from central ministries and departments, institutional finance and special central assistance. During the Fifth Plan, the outlay under special central assistance was Rs 120 crore. During the Sixth Plan, the outlay for special central assistance has been kept at Rs 470 crore.

The tribal sub-plan areas in 19 states and union territories are grouped into 180 integrated tribal development projects as operational units.

During the Sixth Plan, tribal majority pockets, which have a total population of 10,000 and 50 per cent or more of tribal population, are also to be taken up and the modified area development approach as a part of the tribal sub-plan strategy. The concept of tribal sub-plan itself has been kept flexible and has been adopted to the local situation. Programmes undertaken include agriculture and allied sector, irrigation, marketing and co-operation, education, etc. The most backward groups among the tribal primitive tribes are given special attention by preparing separate plans for them.

Tribal development has, from the beginning, been based on a two-pronged approach, namely, (a) promotion of developmental activities to raise their level of living and (b) protection of their interests through legal-administrative support.

Tribal Research Institute

Tribal research and training institutes have been functioning in Andhra Pradesh, Assam, Bihar, Gujarat, Kerala, Madhya Pradesh, Maharashtra, Orissa, Rajasthan, Uttar Pradesh and West Bengal. They have played a useful role in the formulation of tribal sub-plans, project reports, monitoring and evaluation, research studies and training of personnel.

BACKWARD CLASSES

The report of the Second Backward Classes Commission, headed by B. P. Mandal, which was submitted to Government on 31 December 1980 is under consideration.

RELIEF AND REHABILITATION

Sri Lanka Repatriates

Under the Indo-Sri Lanka Agreements of 1964 and 1974, Government agreed to grant Indian citizenship and repatriate six lakh persons of Indian origin together with the natural increase in that number over a period of 17 years. Up to the end of February 1984, about 4.31 lakh persons had arrived in India from Sri Lanka. These families are being provided various relief and rehabilitation facilities.

As a result of ethnic violence in Sri Lanka, even persons of Indian origin not covered by the agreements have been coming to India since 22 August 1983. Such persons who approach Tamil Nadu Government for relief assistance are also admitted to either of the camps at Mandapam and Kottapattu. As on 28 February 1984, there were 532 refugee families consisting of 1,665 persons staying in camps. They are also granted all relief facilities as are admissible to the repatriates covered by the Indo-Sri Lanka Agreements. No rehabilitation assistance is being granted to them as they are expected to go back to Sri Lanka as soon as the conditions become normal.

Persons Affected by Disturbances in Assam

During disturbances in Assam, a large number of persons were affected. 3,10,732 persons lived in 250 relief camps during peak period. On 10 April 1983 further disturbances took place in Goalpara district and 16, 717 more persons were affected.

The Co-ordination Committee set up to co-ordinate relief and rehabilitation measures in Assam, had fixed the scales and pattern of relief and rehabilitation assistance to the affected persons. They were given relief assistance in the form of ration, blankets, clothings, cash doles, etc. All relief camps in Assam set up for the affected families have been closed and the families had returned to their villages. Most of these families have since been rehabilitated.

On return to their homes, the affected families have been given assistance for reconstruction of houses and for purchase of milch cattle. School going children have been given assistance for purchase of books. The agriculturist families were provided assistance for purchase of seeds, tractorisation of land, fertilizers and replacement of lost bullocks. Non-agriculturist families have been given Rs 500 each for small trade, etc. All the affected families have also been provided maintenance assistance for certain periods depending on their requirement. The Assam Government has also been provided financial assistance for reconstruction of schools, repair of bridges and roads and drinking water supply arrangements. The families of those killed have been given ex-gratia payment of Rs 5,000 for each person killed.

More than eight thousand affected persons who had gone to West Bengal had returned to Assam. About 20,521 affected persons were last reported to be still in the relief camps in West Bengal. The Assam Government is taking steps for the return of these families to Assam.

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The Prime Minister's National Relief Fund was started in 1947. Up to the end of March 1984 public contributions to the fund amounted to about Rs 58.43 crore. Over Rs 31.87 crore were utilised in providing relief to people affected by natural calamities such as earthquakes, floods, cyclones, droughts, famines and fire. Relief was also given in the early stages to displaced persons from Pakistan.

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10 MASS COMMUNICATION

The term mass communication stands for dissemination of information, ideas and entertainment by the use of communication media. The media include those which use modern means of communication such as radio and television, film, the press, publications and advertising. In fact, they co-exist with important traditional media such as folk dance, drama and puppetry. In India, the Ministry of Information and Broadcasting has a large set-up of mass communication, with the regional and branch offices as well as mobile units, spread all over the country.

ELECTRONIC MEDIA

AKASHVANI

Radio broadcasts started in India in 1927 with two privately owned transmitters at Bombay and Calcutta. The Government took them over in 1930 and started operating them under the name of Indian Broadcasting Service. In 1936, the name of service was changed to All India Radio (AIR)—since 1957 it is known as Akashvani—and it was made a separate department. AIR is now the biggest media organisation of the Ministry of Information and Broadcasting. It i serving as an effective medium not only to inform and educate peopl but also to provide healthy entertainment.

Broadcasting Network

All India Radio's network consisted of six radio stations in 1947 Now there are 86 stations including three *Vividh Bharati*/commercia centres and two relaying centres. Commercial centres are at Chandigarh, Kanpur and Vadodara. Relaying centres are at Alleppey an Ajmer. In addition, there are two auxiliary studio centres at Bhubaneswar and Shantiniketan. These cover all the important cultura and linguistic regions of the country. The programmes which ar radiated from 162 transmitters, of which 126 are medium wave cover 89.69 per cent of the population spread over 78.90 per cen area of the country.

Music

Music was largely under the patronage of princely courts during pre-Independence days. With the abolition of princely states after 1947, the task of preserving the musical heritage and propagation of music in all its variety, specially classical music-was taken over by AIR. Through the regular broadcast of music programmes from all AIR stations in the network AIR has contributed largely to bringing about an awareness and appreciation of Indian music—classical, light, folk and tribal.

About 36 per cent of the total broadcast of AIR at present constitutes music programmes. This includes classical and light classical music, light, devotional, folk, tribal, film as well as classical and light western music. Apart from the regular music programmes, AIR started wayback in the 1950s some of the major network programmes, namely the national programme of music, and the Radio Sangeet Sammelan. A few years later the national programme of regional and light music as well as the zonal hook-up concerts by young artists were added to these programmes. Through these programmes AIR brings to its listeners the best of musical talent available in the country on its network.

In order to create better appreciation of the musical heritage of the country, specially among the younger generation, AIR broadcasts music lessons and music appreciation programmes regularly from various AIR stations. New talent is continuously scouted through the regular music auditions as well as annual music competitions. Young and promising artists of higher grades are featured in public concerts through a system of chain booking which enables artists of one region to get exposure in the other regions of the country.

One of the significant achievements of AIR's national programmes and Sangeet Sammelan concerts is the integration of Hindustani and Karnatak styles which are the major styles of music in the country. Eminent artists as well as the most promising younger artists in both the styles are presented in these programmes. This has created a mutual appreciation and enjoyment of Hindustani music in the south and the Karnatak music in the north. During Radio Sangeet Sammelan a few Hindustani music concerts are arranged in the southern region and a few Karnatak music concerts in the northern region.

Another important milestone in AIR's music programmes was the inception of national orchestra known as AIR *Vadya Vrinda*, in Delhi in 1952. A second unit of this orchestra was later added in Madras. These orchestral units consisting of both Hindustani and Karnatak musicians has done remarkable experiments in orchestration of Indian music under eminent conductors and has a wide repertoire of a variety of compositions based on traditional *ragas* and folk melodies as well as thematic compositions. These units are occasionally combined to give public performances.

AIR pays equal attention to the preservation and development of folk and light music. Besides the national programme, AIR stations broadcast regularly folk and tribal music of various regions. In order to place the work of folk music preservation on a sound footing, folk music collection and preservation centres have been started at 20 AIR stations. Nearly 140 hours of folk music of the very rare variety have been collected in the recent past. Special funds for production of high quality light music have been provided to various AIR stations.

The need to develop mass singing as a means of achieving national integration was realised very early. Starting modestly with 4 choral groups in the the 4 zonal stations of Delhi, Bombay, Madras and Calcutta, the scheme of choral groups has now been extended and 17 stations have already instituted choral groups at their stations. As an extension of this programme of mass singing, promotion of community singing as a movement throughout the country has now been taken up in a big way. With the objective of making mass singing among children very popular, specially selected songs with simple text and tunes are being propagated through broadcasts as well as training of teachers and students in mass singing.

Another important activity is the commercial release of selections from AIR archives through gramophone records and cassettes. Till date 31 items have been released.

Some of the major music events held in the different parts of the country are also covered by AIR. Two major festivals, excerpts from which are broadcast on the national as well as zonal hook-up level are the Thyagaraja festival and the Tansen festival.

Western music which commands sizeable listening in various parts of the country is given due attention by AIR. Western music is now being broadcast from 17 stations some of them as a part of the youth programmes. These programmes bring to the listeners not only the western music artists of the country but also the best selections of recorded western music from all over the world. Whenever eminent western music artists from abroad visit the country AIR takes advantage of their presence by recording their music for its own listeners.

The Vividh Bharati Service of AIR broadcast popular music, film and non-film including folk, choral and patriotic songs.

Through overseas transmissions, AIR seeks to satisfy the cultural needs of Indian nationals living abroad.

The music archives of AIR are among the most important collections of music records in the country.

Vividh Bharati and Commercial Service

Popular entertainment programme, known as *Vividh Bharati,* is broadcast from 31 centres, including two short wave transmitters at Bombay and Madras for a total duration of 12 hours and 45 minutes on week days and 13 hours and 15 minutes on Sundays and holidays. Film music, humorous skits, short plays and features are presented in these programmes.

Commercial broadcasting on the radio introduced on 1 November 1967 from Bombay-Nagpur-Pune, on an experimental basis, is at present carried by 29 centres. Advertisements are accepted in any language as tape-recorded *spots* of 7, 10, 15, 20 and 30 seconds duration. Sponsored programmes were introduced in May 1970. From 1 April 1982 commercials have been introduced on a limited experimental scale on the primary channel with advertisements being allowed for a minute each before the national news bulletin in Hindi in the morning and evening and after the English news bulletin in the morning and evening. The income from the broadcast of advertisements before and after the national news bulletins was Rs 1,09,43,500 (gross) for the period April 1982 to February 1984.

Plays and Features

Each station broadcast at least two plays every week. Besides origional plays, radio adaptations of outstanding novels, short stories and stage-plays are also broadcast. Outstanding plays in Indian languages are broadcast in the national programme of plays which was started in 1956. A series of monthly chain-plays is also broadcast. Under this, 12 model plays are produced in a year and circulated amongst major stations. Serial playlets which project the current socio-economic issues are broadcast from many stations on weekly basis. Humourous plays and skits are broadcast on the entire network of Vividh Bharati.

The national programme of features, started in 1956 focusses, attention on matters of national importance and interest in the political, economic, social or cultural spheres. The original script may be in English or Hindi but is invariably translated into regional languages and is broadcast from all the regional stations. Another series entitled *Main Aur Meri Dharti* (Features on the developmental activities of the states/union territories) has been included in the programmes.

News & Current Affairs

The News Services Division, All India Radio, attempts comprehensive and speedy coverage of news and views through its news bulletins, commentaries and discussions on current affairs. Besides noticing major trends in political, economic, social, cultural and scientific fields it gives adequate attention to parliamentary proceedings, rural development and sports activities. In its Home Service, AIR puts out everyday from Delhi 68 bulletins in 19 languages for a duration of 10 hours 8 minutes. Regional news units, numbering 41, put out 123 bulletins, including three from Delhi, in about 60 languages and dialects for a duration of about 16 hours and 18 minutes. In the External Services, 63 bulletins in 24 languages are put out every day from Delhi, Calcutta, Bombay and Madras for a duration of about 8 hours 30 minutes. Special news bulletins carrying world news, sports news and state and development news and slow speed bulletins in English and Hindi are broadcast. A weekly news bulletin of human interest stories in Hindi and other Indian languages and a daily press round-up in English and Hindi were started in 1977. A special bulletin for persons going on Haj pilgrimage is also broadcast.

When Parliament is in session, daily commentaries in English and Hindi reviewing the day's proceedings in both the Houses are broadcast. Weekly commentaries in English and Hindi entitled *This Week in Parliament* and *Is Saptah Sansad Mein* respectively were introduced in 1977. Daily and weekly review of state legislatures are broadcast from state capitals in languages concerned. Commentaries by specialists in various fields and scripts from AIR's correspondents are broadcast in English, Hindi and Urdu in the programmes called *Spotlight, Samayiki* and *Tabsara* respectively. In the current affairs programme every Sunday, specialists take up live issues for indepth discussion. Eyewitness accounts, interviews with important persons and reactions of the commonman to the happenings around him are presented through radio newsreel, both in English and Hindi.

A major part of the news broadcast by AIR comes from AIR correspondents. AIR has a corps of about 327 both full-time and part-time correspondents posted in India and abroad. AIR also subscribes the news agencies.

The News Services Division has a monitoring unit at Ayanagar at New Delhi. This unit alongwith monitoring attached with the General News Room Monitors 144 transmissions daily from various foreign broadcasting organisations in nine foreign and five Indian languages. The monitoring services of AIR are an important source of news and many a time it takes AIR much ahead of newspapers in giving news about world happenings.

External Services

The broadcasts in the external services of All India Radio aim to project a true and objective image of the country to listeners abroad and to explain the country's point of view on matters of national and international importance. The broadcasts also attempt to acquaint foreign listeners with the ideas and achievements of India as an open society and its secular ideals and to stimulate interests in the rich heritage of country's art, culture and traditions and to highlight the progress achieved in different spheres of life. They are also designed to serve as a link with the people of Indian origin living or settled abroad.

The external services are put out in 25 languages—17 foreign and 8 Indian—for 56 hours and 45 minutes everyday, reaching listeners in several widely scattered regions of the world.

Programme for Special Audiences

The programmes for special audiences and occasions include those for the armed forces, women and children, the youth, students, rural and tribal people and industrial workers. Fourteen AIR stations broadcast daily programmes for the armed forces, while 60 stations present programmes twice a week in regional languages for women.

Family welfare programmes are planned and produced by 36 family welfare units at various stations of AIR. Almost all stations broadcast family welfare and health programmes in a general way. These programmes are integrated with the general programmes as well as those meant for special audiences.

Almost all AIR stations broadcast programmes specially for rural listeners for about 30 to 75 minutes every day. In addition, a daily programme on hard-core agriculture is broadcast for 45 to 55 minutes from 64 farm and home units located in different stations.

AIR stations broadcast weather bulletins every day for the farming community. Thirty-one stations broadcast a special programme called the *Farm School on the AIR* where instructions and guidance on farming is provided to listeners.

Programmes consisting of both music and spokenword are put out in more than 146 tribal dialects for the *adivasis* from various stations.

To provide a forum for self-expression to the youth who constitute the majority to give them a sense of partnership in the country's destiny and ensure their involvement in hastening the process of nation building AIR stations broadcast programmes for the youth on their primary channels. AIR stations broadcast programmes of varying duration and frequency in different languages and different formats such as talk, discussions, interviews, plays, features and music, etc. The service is open to persons in the age group 15—30. AIR, Delhi, Calcutta, Hyderabad, Jammu and Srinagar broadcast these programmes for long hours on a separate transmitter under *Yuva Vani*. The service is of the youth, by the youth and for the youth.

For students in school most of the AIR stations broadcast programmes based on the school curriculum to reach students in the interior areas. Radio support to university correspondence degree courses is also provided by several stations.

udience esearch

The audience research unit undertakes regular surveys an danalysis of listener's reactions to the programme broadcast on the AIR network. It provides data on popularity ratings of the programmes, audience size, reach and coverage, reception quality, etc., for main as well as for commercial channels. For commercial channels, it helps in determining the rates of spots and sponsored programmes. It also undertakes feed forward surveys to provide basic information about the audience and the potential for programme coverage when a new AIR station is started.

ranscription nd Programme Exchange ervice

The Transcription and Programme Exchange Service of AIR helps different stations to receive and exchange outstanding programmes, transcribes the speeches of eminent personalities and maintains the Library of Sound Archives.

The Archives Library, set up in 1954, collects and preserves on a permanent basis the recorded speeches of President, Vice President and Prime Minister. Voice recordings of eminent Indian and foreign personalities have been preserved. The Archives has the unique privilege of having recorded the voice of Mahatma Gandhi for over 50 hours. The library has about 3,000 tape recordings of Jawaharlal Nehru's and about 2,900 of Indira Gandhi's speeches.

Among other valuable items preserved are (i) recitations from the *Vedas* in Sanskrit in the traditional style, (ii) poetry recitations by eminent poets in Hindi and other languages, (iii) recitals by old masters of music, both Hindustani and Karnatak, (iv) selected items of music by eminent musicians representing different *gharanas,* representative pieces of folk music, devotional music and stage songs and (v) recordings of freedom fighters.

Over 2,100 hours of music of great masters—both Hindustani and Karnatak, and folk and regional music have been preserved so far and special efforts are being made to collect rare and old recordings of master musicians.

Extensive use of archival material is being made by AIR for preparation of different categories of national programmes. The Delhi station of AIR has been broadcasting since April 1974 a weekly programme entitled *Chayan* for one hour on Sundays based on recordings available in the Archives. A similar weekly programme of half an hour entitled *Sanchayita* is broadcast from *Yuva Vani* service.

The programme exchange unit of this service circulates recordings and scripts received from AIR stations and foreign broadcasting organisations. All national programmes of music, plays, features, talks/interviews and discussions are circulated among the stations. Contributions from about 50 foreign broadcasting organisations are received, processed and circulated to AIR stations.

Programme Journals

All India Radio brings out eight programme journals. These are *Akashvani* (English), *Akashvani* (Hindi) and *Awaz* (Urdu) published from Delhi, *Betar Jagat* (Bengali) from Calcutta, *Akashi* (Assamese) from Guwahati, *Vanoli* (Tamil) from Madras, *Vani* (Telugu) from Vijayawada and *Nobhovani* (Gujarat) from Ahmedabad. All these are fortnightlies. The External Services Division of All India Radio also brings out quarterly programme folders intended for the overseas listeners, one each in Arabic, Burmese, Chinese, French, Indonesian, Nepali, Persian, Pushtu, Swahili and Tibetan. It also brings out a monthly journal India Calling in English.

TABLE 10.1
BROADCAST RECEIVER LICENC
JANUARY 1982)

Circle	Radio	Television
Andhra Pradesh	4,52,932	45,956
Bihar	3,37,708	3,603
Delhi	4,58,623	4,07,592
Gujarat	9,66,818	24,486
Jammu and Kashmir	43,406	23,259
Kerala	7,48,843	4,396
Karnataka	8,43,878	60,710
Maharashtra	13,91,179	5,55,398
Madhya Pradesh	2,38,034	8,881
North East (Shillong)	40,341	1,316
North West (Ambala)	6,82,525	3,35,973
Orissa	97,209	4,040
Rajasthan	2,53,716	36,296
Tamil Nadu	12,43,704	2,09,379
Uttar Pradesh	4,80,436	2,11,164
West Bengal	3,36,137	1,72,836
Army Postal Services	49,662	6,441
Total	86,55,501	21,11,726

DOORDARSHAN

Television was introduced in India as an experimental service in Delhi on 15 September 1959. The regular service started in 1965. Thereafter, a number of TV centres namely Bombay, Srinagar, Jalandhar, Calcutta, Madras and Lucknow became operational from October 1972 onwards in quick succession. The next spurt was witnessed on the eve of the Ninth Asian Games, *i.e.* in November 1982 when 20 low power transmitters were installed at different state capitals and important towns. Another important landmark was on 15 August 1982 when colour television was introduced. INSAT IA became operational and common national programme was started for the entire network. Doordarshan is utilising INSAT to extend its service to backward and remote rural areas where development activities need media support. The coverage includes three districts in each state, namely, Andhra Pradesh, Orissa, Maharashtra, Gujarat, Uttar Pradesh and Bihar. Here 2,000 direct reception sets and 2,000 VHF (very high frequency) community sets are being installed in selected villages.

Presently, Doordarshan is in the process of rapid expansion. From its present 46 transmitters, it is expected to increase its number to 180 transmitters (high power transmitters as well as low

TABLE 10.2

COVERAGE OF DOORDARSHAN CENTRES

(As on 1 April 1984)

S. No: Centre	Commssioned on	Band/Channel	Power of Transmitter (kilowatt)	Service Range (km.)	Area covered (thousand sq km)	Population Covered (lakh)		
						Urban	Rural	Total
1. Delhi	15 September 1959	I/4	10 kw	110	32·8	88·52	108·82	197·34
2. Bombay	2 October 1972	I/4	10 kw	60—150	18·9	99·37	33·63	133·00
3. Srinagar	26 January 1973	I/4	10 kw	30—70	15·7	8·27	23·06	31.33
4. Amritsar	29 September 1973	III/7	10 kw	110	12·6	13·10	32·62	45·72
5. Pune	2 October 1973	III/5	0·6 kw	55—100	21·94	21·09	32·04	53·13
6. Calcutta	9 August 1975	I/4	10 kw	130	36·50	108·49	187·91	296·40
7. Madras	15 August 1975	I/4	10 kw	130	21·6	56·66	49·16	105·82
8. Lucknow	27 November 1975	I/4	10 kw	110	24·9	18·50	91·02	109·52
9. Pij	1 August 1976	III/7	1 kw	60	9·75	4·23	22·77	27·00
10. Jaipur	1 March 1977	III/5	10 kw	130	50·3	24·71	65·94	90·65
11. Mussoorie	12 August 1977	III/10	10 kw	220	35·1	36·46	104·42	140·88
12. Gulbarga	3 September 1977	III/7	1 kw	60	11·3	4·29	12·27	16·56
13. Hyderabad	23 October 1977	I/4	10 kw	120	45·2	45·87	64·23	110·10
14. Sambalpur	30 April 1978	III/7	1 kw	60	11·3	3·08	13·48	16·56
15. Muzzaffarpur	14 June 1978	III/6	1 kw	60	11·3	5·12	77·28	82·40
16. Kanpur	12 January 1979	III/5	10 kw	120	32·2	27·32	95·61	122·93
17. Jalandhar	13 April 1979	III/9	10 kw	125	23·1	21·57	57·53	79·10
18. Raipur	10 May 1979	III/5	1 kw	60	11·3	9·01	14·82	23·83
19. Bangalore	1 November 1981	III/5	1 kw	45	6·3	30·65	13·82	44·47
20. Nagpur	15August 1982	III/7	1 kw	45	6·3	13·86	7·14	21·00
21. Agartala	19 November 1982	III/8	100 w	25	1·15	1·31	2·00	3.31
22. Aizwal	19 November 1982	III/9	100 w	25	2·0	0·76	0·36	1·12
23. Bhopal	19 November 1982	III/5	100 w	25	2·0	6·72	1·56	8.28
24. Bhubneswar	19 November 1982	III/8	100 w	25	2·0	2·19	4·95	7·14
25. Deoria	19 November 1982	III/11	100 w	25	2·0	0·55	11·42	11·97
26. Gangtok	19 November 1982	III/9	100 w	25	1·8	0·37	0·66	1·03
27. Guwahati.	19 November 1982	III/9	100 w	25	2·0	2·00	5·10	7.10
28. Imphal	19 November 1982	III/6	100 w	25	2·0	1·55	1·03	2·58
29. Indore	19 November 1982	III/9	100 w	25	2·0	8·27	4·24	12·51
30. Itanagar	19 November 1982	III/10	100 w	25	2·0	0·24	0·84	1·08

S. No.	Centre	Commissioned on	Band/ Channel	Power of Transmitter (kilowatt)	Service Range (km)	Area Covered (thousand Sq km)	Population covered (lakh)		
							Urban	Rural	Total
31.	Jammu	19 November 1982	III/12	100 w	25	1·8	2·32	3·78	6·10
32.	Kakinada. . . .	19 November 1982	III/5	100 w	25	1·4	3·40	3·74	7·14
33.	Kohima	19 November 1982	III/8	100 w	25	2·0	0·36	0·80	1·16
34.	Malda	19 November 1982	III/12	100 w	25	1·8	0·94	9·49	10·43
35.	Panaji	19 November 1982	III/7	1 kw	40	2·6	2·60	4·66	7·26
36.	Patna	19 November 1982	III/11	100 w	25	2·0	10·34	13·61	23·95
37.	Port Blair . .	19 November 1982	III//10	100 w	25	0·9	0·50	0·03	0·53
38.	Shillong	19 November 1982	III/12	100 w	25	2·0	1·73	1·09	2·82
39.	Shimla	19 November 1982	III/8	100 w	25	2·0	0·70	1·65	2·35
40.	Suratgarh. . . .	19 November 1982	III/11	100 w	25	2·0	0·29	1·60	1·89
41.	Trivandrum . . .	19 November 1982	III/5	100 w	25	1·3	5·91	11·61	17·52
42.	Allahabad . . .	15 August 1983	III/7	1 kw	30	3·1	6·56	12·85	19·41
43.	Ahmadabad . . .	19 November 1983	III/5	1 kw	30	1·2	26·95	3·00	29·95
44.	Gwalior	5 January 1984	III/7	80 w	25	2·0	5·73	2·00	7·73
45.	Asansol	11 January 1984	III/7	1 kw	30	2·8	7·31	10·46	17·77
46.	Vijayawada . . .	23 January 1984	III/7	1 kw	45	6·4	12·38	14·40	26·78

Total population covered by Doordarshan centres = 1986.65 lakh
Percentage of coverage to total population = 29 per cent
Total area covered by Doordarshan centres = 4,92,640 sq km
Percentage of coverage to total area = 16·8 per cent.

power transmitters) by the end of 1984. Till 31 December 1984, 168 transmitters have been opened. On completion, 180 transmitters will approximately cover 70 per cent of the population.

Television started as a part of All India Radio. It delinked from All India Radio on 1 April 1976 and was given the present name of Doordarshan with a full fledged department under the Ministry of Information and Broadcasting. It is headed by a Director General.

As on 1 April 1984, Doordarshan had a net-work of 46 transmitters, *i.e.,* 8 main kendras, 9 relay centres, 8 post site INSAT centres and 21 LPTs. The total population covered is 1986.65 lakh *i.e.* 29 per cent of the total population. Out of this 752.15 lakh is urban *i.e.* 11 per cent and 1,234.50 lakh rural *i.e.* 18 per cent The total area covered by the present transmitters is 4,92,640 sq km *i.e.* 16.8 per cent of the country's area. The total TV licences as on 31 December 1982 were 21,11,726, out of which 20,84,354 were domestic licenses, 6,152 concessional licenses and rest 21,220 pertained to other categories. To stimulate community about 10,000 community sets and 310 tele-clubs have been started in different parts of the country where people sit together and watch the programmes.

Table 10.2 shows coverage of Doordarshan centres as on 1 April 1984.

Video Cassette Recorders

The Government has imposed from 1 November 1981, licence fee for using Video Cassette Recorders equipped with RF turner sections (VHF/UHF) and/or the monitor which are capable of receiving broadcast programmes. Persons possessing Video Cassette Recorders are supposed to have domestic or commercial licence according to the purpose for which the set is being used.

PRESS AND PRINT MEDIA

REGISTRAR OF NEWSPAPERS FOR INDIA

The office of the Registrar of Newspapers for India commonly known as Press Registrar came into being on 1 July 1956. The duties and functions of the Press Registrar are defined in the Press and Registration of Books Act, 1867 as amended from time to time. Apart from these duties, the Registrar also allots newsprint and recommends import of printing machinery for newspapers.

At the end of 1982, the total number of newspapers and periodicals was 19,937, as compared to 19,144 in 1981, an increase of 4.1 per cent. Among them, 1,334 were dailies, 103 tri/bi-weeklies, 5,898 weeklies and 12,602 other periodicals.

Newspapers were published from all the states and union territories except from Arunachal Pradesh and Lakshadweep. Uttar Pradesh claimed the top position of being the largest publisher with 2,799 newspapers. It was followed by Maharashtra (2,625), Delhi (2,458) and West Bengal (2,209). More than one thousand newspapers were also brought out from Tamil Nadu (1,237), Rajasthan (1,109), Andhra Pradesh (1,071), Kerala (1,043).

In the case of dailies also, Uttar Pradesh maintained its top position with 182 newspapers, followed by Maharashtra (172), Madhya Pradesh (110), Karnataka (109), Tamil Nadu (108) and Kerala (105).

Table 10.3 shows the state and periodicity-wise details of the number of newspapers at the end of 1982.

TABLE 10.3
NUMBER OF NEWSPAPERS (STATE AND PERIODICITY-WISE) 1982

State/Union Territory	Dailies	Tri/Bi-weeklies	Weeklies	Others	Total
1. Andhra Pradesh .	61	2	383	625	1,071
2. Assam . . .	7	4	74	95	180
3. Bihar . . .	54	3	349	274	680
4. Gujarat . . .	36	2	172	461	671
5. Haryana . . .	14	—	138	220	372
6. Himachal Pradesh .	1	—	22	55	78
7. Jammu and Kashmir .	27	—	113	40	180
8. Karnataka . .	109	4	221	637	971
9. Kerala . . .	105	2	139	797	1,043
10. Madhya Pradesh .	110	9	380	229	728
11. Maharashtra . .	172	29	657	1,767	2,625
12. Manipur . .	33	2	6	48	89
13. Meghalaya . .	1	4	27	24	56
14. Nagaland . . .	—	—	5	2	7
15. Orissa . . .	13	—	43	275	331
16. Punjab . . .	37	1	226	366	630
17. Rajasthan . .	98	2	449	560	1,109
18. Tamil Nadu . .	108	6	148	975	1,237
19. Tripura . . .	13	1	43	11	68
20. Uttar Pradesh . .	182	20	1,395	1,202	2,799
21. West Bengal . .	62	7	481	1,659	2,209
22. Andaman and Nicobar Islands	3	—	6	8	17
23. Arunachal Pradesh .	—	—	—	—	—
24. Chandigarh . .	11	—	34	127	172
25. Dadra and Nagar Haveli . . .	—	—	1	—	1
26. Delhi . . .	49	3	354	2,052	2,458
27. Goa, Daman and Diu . . .	9	—	9	36	54
28. Lakshadweep . .	—	—	—	—	—
29. Mizoram . . .	18	1	16	12	47
30. Pondicherry . .	1	1	7	45	54
Total . . .	1,334	103	5,898	12,602	19,937

Newspapers were brought out in 85 languages. Apart from the sixteen principal languages, newspapers were published in 69 other languages, and a few foreign languages. The highest number of newspapers were published in Hindi (5,655) followed by English (3,689).

Table 10.4 shows publication of newspapers languagewise at the end of 1982.

TABLE 10.4

NUMBER OF NEWSPAPERS (LANGUAGE AND PERIODICITY)

Language	Dailies	Tri/Bi-weeklies	Weeklies	Others	Total
Hindi . .	442	27	2,594	2,592	5,655
English . .	11	10	417	3,151	3,689
Assamese .	3	2	26	45	76
Bengali . .	43	7	403	1,084	1,537
Gujarati .	39	3	173	510	725
Kannada .	80	3	150	392	625
Kashmiri .	—	—	1	—	1
Malayalam .	103	2	120	577	802
Marathi . .	124	20	365	617	1,126
Oriya . .	11	—	33	228	272
Punjabi . .	24	1	174	233	432
Sanskrit . .	2	—	4	25	31
Sindhi . .	4	—	20	38	62
Tamil . .	102	4	124	590	820
Telugu . .	31	1	154	367	553
Urdu . .	134	6	654	536	1,330
Bilingual .	32	13	358	1,161	1,564
Multilingual .	9	1	66	274	350
Others . .	40	3	62	182	287
Total	1,334	103	5,898	12,602	19,937

Circulation

Total circulation of newspapers/periodicals as on 31 December 1982 was 5,00,94,000 copies as compared to 5,11,02,000 copies in 1981 indicating a decrease of 2 per cent. There were 7,099 newspapers which supplied the circulation data for 1982. Out of them only 176 come in the category of big newspapers (having circulation of more than 50,000 copies), 374 in medium category (with a circulation between 15,001 to 50,000 copies) and 6,549 in small category (with a circulation upto 15,000 copies).

Table 10.5 shows circulation of newspapers at the end of 1982.

Ownership Pattern

Majority of the newspapers in 1982 were owned by individuals. The circulation data and ownership pattern of newspapers is given in table 10.6.

TABLE 10.6

FORM OF OWNERSHIP

Form of Ownership	Number[1]	Circulation (In thousands)	Percentage share in Total Circulation
Individuals	4,250	1,81,20	36·2
Joint Stock Companies .	468	2,01,78	40·3
Firms/Partnerships . .	377	43,64	8·7
Societies/Associations . .	1,399	41,79	8·3
Trusts	205	15,05	3·0
Governments . . .	187	11,74	2·3
Others	213	5,74	1·2
Total	7,099	5,00,94	100·00

[1] For which circulation was available.

TABLE 10.5

Circulation of newspapers in 1982

LANGUAGE AND PERIODICITY-WISE

(·000)

Language	Dailies	Tri/ Bi-Weeklies	Weeklies	Fortnight-lies	Monthlies	Quarterlies	Annuals	Others	Total
1. Hindi	37,97	23	43,01	16,81	38,20	93	8	40	1,37,63
2. English	30,72	—	13,74	11,69	30,90	6,25	1,15	2,77	97,22
3. Assamese	48	48	1,27	13	42	—	—	—	2,78
4. Bengali	10,44	17	8,47	5,01	5,35	1,60	1	62	3,67
5. Gujarati	10,50	36	5,86	1,49	6,71	9	34	17	25,52
6. Kannada	4,89	1	4,86	80	4,86	1	35	3	15,81
7. Kashmiri	—	—	—	—	—	—	—	—	—
8. Malayalam	14,39	2	14,65	3,29	12,74	9	3	14	45,35
9. Marathi	12,66	29	5,58	54	6,62	17	201	12	27,99
10. Oriya	2,05	—	29	21	1,88	18	—	—	4,61
11. Punjabi	2,83	—	4,42	69	2,74	7	—	—	10,75
12. Sanskrit	2	—	3	—	1	1	—	—	7
13. Sindhi	12	—	29	2	23	—	—	—	66
14. Tamil	8,25	2	20,20	3,54	10,48	8	—	—	42,57
15. Telugu	4,77	—	7,97	64	6,33	19	—	6	19,96
16. Urdu	7,36	8	8,56	1,42	5,17	8	—	2	22,69
17. Bilingual	39	20	3,56	63	5,21	84	7	27	11,17
18. Multilingual	5	2	43	8	1,42	27	3	19	2,49
19. Other Languages	58	2	68	13	33	23	—	3	2,00
Total	1,48,47	1,90	1,43,87	47,12	1,39,60	11,09	4,07	4,82	5,00,94

Newsprint

The requirements of newsprint for newspapers and periodicals in the country are met through three indigenous mills and by imports. Two new newsprint mills, *viz.,* the Kerala Newsprint Mills and Mysore Paper Mills, commenced production in 1982. The production of the three domestic newsprint mills in 1982-83 was 1,02,609 tonnes.

PRESS INFORMATION BUREAU

The Press Information Bureau (PIB) is the main channel of communication between the Government and the media; the information put out by the Bureau goes to dailies as well as news periodicals, news agencies and radio and television organisations, both Indian and foreign. With its countrywide teleprinter network and airbag facilities, information put out by PIB goes to newspapers not only in Delhi but also in other parts of the country. No other organisation in the country reaches such a large number of newspapers and other media. While less than a thousand newspapers subscribe to the wire agencies, PIB distributed its press material to 6,897 newspapers in 1983-84.

Functions

As the central agency of the Government for informing the people about its policies and programmes, PIB functions upon the basic premise that a democratic Government must ensure that its policies, programmes and activities are properly presented and interpreted to the public on whose good will and support it holds office. In the light of this objective, the main functions performed by PIB are to put out information on Government policies, programmes and activities, feedback on how these are received and lastly to advise the Government on its information policy.

To perform these functions, officers of the Bureau are attached to all the ministries and departments of the Government of India at its headquarters. These officers are in daily contact with their respective ministries and departments. Apart from explaining and interpreting Government policies and disseminating factual information, an Information Officer also performs the role of public reaction evaluator, keeping Government in touch with public opinion and of adviser to the Government on its information policy. The Information Officer maintain continuous liaison with newspaper editors and correspondents as well as representatives of other mass media.

The Bureau employs a variety of means to put out information. Written material issued by the Bureau includes press communiques, press notes and handouts, backgrounders, features and newsletters. The material is in English, Hindi, Urdu and 15 other languages. In addition to written material, the Bureau arranges press conferences and briefings to enable media representatives to get the news and clarifications at first hand.

Pictorial Service

PIB supplies a large number of photographs dealing with activities of the Government to dailies and periodicals all over the country to enable them to supplement their written word coverage by pictures. The Bureau has its own tele-photo equipment with which photographs are transmitted the same day to some of the regional and branch offices of the Bureau.

The Bureau supplies ebonoid blocks to small and medium newspapers which have no facilities to make their own blocks. *Charbas* are supplied to Urdu newspapers for use in the litho process.

Accreditation

The Bureau provides professional facilities to correspondents, cameramen and technicians accredited to the Government. As on 31 December 1983, a total of 732 correspondents, cameramen and technicians were accredited. Thirtysix foreign countries have correspondents resident in Delhi. The Bureau extends temporary accreditation facility to foreign correspondents and cameramen coming to India on short visits. Special accreditation arrangements are made for important events.

Conducted Tours

To make the people aware of the special problems and the development work being carried on in backward, tribal and hill areas, the Bureau conducts press parties to such places. This enables media representatives to look with their own eyes at the work being done by the Government for the development of such areas. Press parties are also taken from backward, tribal and hill areas to Delhi and other developed parts of the country to help the people in such areas to develop a sense of national integration.

Cultural Exchange Programmes

The Bureau is the implementing agency for exchange of visits of journalists between India and foreign countries under cultural exchange programmes and protocols.

Regional and Branch Offices

The Bureau has a network of four regional and 35 branch offices. With the help of these offices, the Bureau's press material is supplied to newspapers and news media in regional languages besides English and Hindi in all parts of the country. The offices are linked to headquarters by a teleprinter network.

Information Centres

To keep a direct link with the people and to assist them to get the latest information on national and international events and to have access to reference material, the Bureau has 11 information centres. These centres are located at New Delhi, Jalandhar, Shimla, Srinagar, Jabalpur, Kanpur, Gangtok, Kohima, Imphal, Aizawl and Port Blair.

Wall Newspaper

To cater to the needs of the people who can read but do not have easy access to newspapers, the Bureau brings out a fortnightly wall newspaper in 13 languages. The wall newspaper serves the dual purpose of promoting national integration and covering the pockets in border areas which have no newspapers and journals.

NEWS AGENCIES

India has four news agencies—Press Trust of India (PTI), United News of India (UNI), Samachar Bharati and Hindustan Samachar. The four news agencies were merged in 1976 to form *Samachar*. *Samachar* was dismantled two years later and the four new agencies resumed their independent operations from 14 April 1978.

PTI was formerly the Associated Press of India (API) owned by Reuters. In 1948, ownership was transferred to Indian hands and the agency took on its present name. Recently, PTI launched a News Scan service for TV and is about to launch a wire photo service, the first of its kind in India. It is also running the Non-Aligned News Desk in Delhi.

United News of India was registered as a company in 1959 and started news operations in March 1961. In May 1982, UNI launched its news service in Hindi under the credit line of *UNIVARTA*. UNI also operates a news service to Gulf countries.

PTI and UNI serve a large number of newspapers in 14 different languages besides AIR and Doordarshan, Central and state governments, commercial establishments, public sector undertakings, universities, airports and other institutions. The two agencies have collaboration agreements with various international news agencies for foreign news. In addition, they have their own correspondents at key centres in different parts of the world.

NON-ALIGNED NEWS AGENCIES POOL

The non-aligned countries met for the first time at the level of Information Ministers in July 1976 at New Delhi and in a Declaration took note of "the persistent and the serious imbalance in the current global information situation" and its adverse effects on the non-aligned countries, stressed the need "to liberate their information and mass media" from the colonial legacy, and expressed their collective determination to rectify this situation. The Declaration called for "the decolonisation of information" and "the establishment of a new international order for information", which was felt to be "as necessary as the new economic order". To give practical shape to this, the Non-Aligned News Agencies Pool was set up on 13 July 1976.

The News Agencies Pool of the Non-Aligned Countries is a system of news exchange based on professional co-operation, equality and co-ordination among the pool partners.

India, which played a leading role in the formation of the pool, was elected the first Chairman of the Co-ordinating Committee from July 1976 to November 1979. India was also elected a member of the Pool's Co-ordinating Committee at its Third General Conference held in Tunis in November 1982.

The Press Trust of India operates India News Pool Desk of Non-Aligned News Agencies Pool. India is, currently having direct communication link with Belgrade, Djakarta, Bahrain, Havana, Colombo, Hanoi and Kuala Lumpur through satellite; and with Dhaka and Islamabad through terrestrial link. A radio beam service to Kabul has also started. Under the expansion scheme, the India News Pool Desk will have direct satellite links to London, Tunis, Lusaka, Mexico/Caracas, Dakar, Baghdad and Tehran.

PRESS COMMISSION

The Second Press Commission, set up in 1978, under the Commission of Inquiry Act, 1952, to enquire into the growth and status of the Indian Press, submitted its report to the Government on 3 April 1982. The Commission was headed by Justice K. K. Mathew. The Report contains 278 recommendations covering diverse aspects of the Press. Suggestions in respect of various recommendations are under the consideration of a Committee of Ministers.

PRESS COUNCIL

Under the Press Council Act, 1978, the second Press Council of India was constituted in February 1982 and Justice A. N. Grover was renominated as Chairman of the Council for the second term. He was the Chairman of the first Press Council, constituted in 1979, for a term of three years.

The Press Council safeguards freedom of press, maintains and improves the standard of newspapers and news agencies. It is comprised mainly of representatives from the newspapers who are charged with the responsibility of regulating the conduct of their brethern in the same sphere. Thus, the Council has come to assume the role of a self-regulating body of the newspapermen themselves.

The Council has the power to consider complaints *suo-moto,* in addition to inquiry into complaints brought before it. It has also been empowered to make observations against any authority including Government if it considers it necessary for the performance of its functions.

RESEARCH AND REFERENCE DIVISION

The Research and Reference Division performs a basic and pivotal function as an information servicing agency to the Ministry of Information and Broadcasting, its media units and their field offices. It serves as an information bank as well as an information feeder service to the media units as an aid to their programming and publicity campaigning work. The Division studies, in particular, trends in mass communication media and maintains a reference and documentation service on current affairs and mass communication.

The Division was initially created in May 1945 but was abolished during the same year, following a cut motion in the Central Legislative Assembly. Later, on 8 August 1950, it was revived and was given the following tasks : (a) to undertake research on matters of publicity, (b) to provide guidance and background notes on current affairs and other topics, (c) to build up a compendium of knowledge on important subjects, and (d) to prepare publicity material for the use of various media units of Ministry of Information and Broadcasting.

The Division compiles and provides, on its own initiative on a regular basis as well as on demand from its clients, backgrounders, reference papers, diary of events, etc. on events and issue of public importance as well as biographical sketches of eminent personalities in different fields of national life.

The Division compiles annually a comprehensive book of reference on India. It includes information on India's geographic and demographic features; its polity and economy; its plans and programmes for socio-economic development. This reference annual has been coming out regularly since 1953; and is rated high as a standard book of reference on India.

A notable feature during 1983 was that the Division was made the nodal point by the Ministry of Information and Broadcasting for collecting and collating material on the Revised 20-Point Programme from various departments of the Central and state governments. The task entrusted to the Division was to analyse and study in-depth the data collected and for issuing reference papers for use by the media units of the Ministry.

The Division runs a well-stocked library which is utilised by the media unit officers, and pressmen. Built around the library is a whole range of documentation activity, under which indexing and cataloguing of books, articles appearing in journals, reports and reference papers received from the Ministries, Departments and a number of public and private institutions are indexed and catalogued subject-wise. A separate unit scrutinises leading newspapers in the country to take out clippings on a variety of current events and issues and indexes these clippings subject-wise. This vast storehouse of ever-growing information material is put to use by the research and reference officers of the Division for preparing background and reference papers and for meeting special day-to-day queries and demands from the media units of the Ministry and other Ministries/ Departments of the Governments, as also from the pressmen.

The National Documentation Centre on Mass Communication was set up as part of the Research and Reference Division in 1976 with the broad objective of collecting, interpreting and disseminating information relating to the agencies, events and trends in the field of mass communication, including press, radio, television, advertising, traditional and folk media, and different media units of the Central and state governments. The Centre documents and indexes all news-items, articles and other informational material relating to all aspects of mass communication and mass media. The Centre disseminates the information collected by it through ten regular documentation services. The Centre brings out a reference annual on mass communication, under the title *Mass Media in India.* Four such annuals have been published so far.

HOTO IVISION

The Photo Division of the Ministry of Information and Broadcasting is the largest photographic unit of its kind in the country. Its annual production is around 6 lakh photographic prints which are used for internal and external publicity. The Division has a valuable collection of photographic negatives of archival value relating to the major news events as well as a collection of photographs showing socio-economic developments in the country. The caption and the positive print albums are maintained in a separate photo library under the Press Information Bureau. This library is the main feeding channel to the outside agencies. The Division has a well-equipped colour laboratory to meet the requirements of colour prints for publicity.

The Division supplies newsworthy black and white photographs of important national and international events to the Press Information Bureau for distribution to the press in India and missions abroad. Officers of the Division accompany the Prime Minister and other VIPs abroad for photo coverage and transmit radio photos of the coverages for publicity in the Indian press.

Photographs are supplied free to Press; but on payment to various government departments, non-publicity organisations and members of public.

The Division gives training to the photographers from Commonwealth countries sponsored under the Colombo Plan.

The Photo Division has its main office at New Delhi and regional offices, one each at Bombay, Calcutta and Madras. Two mobile units one each at Lucknow and Guwahati are being set up soon.

PUBLICATIONS DIVISION

The Publications Division of the Ministry of Information and Broadcasting is one of the leading publishing houses in the country. Originally set up in 1941, as the foreign branch of the Bureau of Public Information, it acquired its present name and separate identity in 1944. It publishes books, journals and other printed material in Hindi, English and all other major Indian languages on a wide range of subjects including art and culture, history and tradition, political evolution, democratic process, economic development and social resurgence. On an average the Division brings out over a hundred titles a year.

The Division has seven major series under which it publishes books. These are (a) *The Collected Works of Mahatma Gandhi,* (b) *Children's Literature,* (c) *Builders of Modern India,* (d) *Cultural Leaders of India,* (e) *States of Our Union,* (f) *Speeches of Leaders* and (g) *Reference Publications.* Besides, a new series of short pictorial biographies for children has also been started. The Division has planned to publish a number of books in English and in major Indian languages on freedom struggle to inspire the younger generation for the sacrifices, they will be required to make for protection of our hard-won freedom.

Books under the series *The Collected Works of Mahatma Gandhi* are produced in English and Hindi. These include Gandhiji's speeches, writings, interview and letters chronologically arranged and objectively edited. Ninety volumes are planned. All the volumes in English have been published. Seventy five volumes in Hindi have appeared so far.

The *Builders of Modern India* series concentrates on presenting biographies of eminent sons and daughters of India, who have played a prominent role in the national renaissance and the struggle for independence. Fifty-nine biographies have been published and 23 more are in various stages of production.

Books under the *Cultural Leaders of India* series provide the readers with authentic accounts of the life and works of great sages and seers who contributed to the culture and thought of India. Those under *States of Our Union* series serve as an introduction to different states and union territories. Eleven titles have been brought out under *Cultural Leaders of India* and 22 under *States of Our Union* series.

The Division publishes speeches of national leaders including the President, the Vice-President and the Prime Minister.

The new project of books on freedom struggle envisages publication of 20 low priced small size informative and inspiring books in paper-back preferably for the younger generation. This will be a part of the series entitled *Books for Millions.*

The Division beings out 21 journals of varying periodicities. *Yojana,* a journal devoted to planning is brought out in Assamese, Bengali, English, Gujarati, Hindi, Malayalam, Marathi, Tamil, Telugu and Urdu. *Bal Bharati* (Hindi) is produced for children, while *Ajkal* (both in Hindi and Urdu) serves the cultural and literary expectations of adult readers. Other journals include the *Indian & Foreign Review, Kurukshetra* (both in Hindi and English) and *Bhagirath* (both in Hindi and English). *The Employment News,* a weekly published in English, Hindi and Urdu, having a circulation of about 3 lakh provides information about job opporunities in various fields to the employment seeking youth.

The books and journals are sold through a network of over 3,000 booksellers and the Division's own sales emporia which are located in New Delhi, Bombay, Calcutta, Madras, Patna, Trivandrum, Lucknow and Hyderabad. Besides selling its own publications, the Division markets and distributes NCERT text books and general books of 22 other Government and autonomous publishing organisations through its sales network.

ORAL AND VISUAL MEDIA

FILMS

Feature films are being produced in India since 1912-1913. While R. G. Torney along with N. G. Chitre made *Pundalik* in 1912, Dhundiraj Govind Phalke (1870-1944) produced *Raja Harishchandra* in 1913. The era of silent films was overtaken by the talkie era in 1931 when Ardeshir Irani (1886-1969) produced *Alam Ara* though silent movies continued to be produced till 1934. Over the years, more than 17,000 feature films have been produced in India which now leads the world in the annual output of feature films.

During 1983, as many as 741 Indian feature films were certified by the Central Board of Film Certification for public exhibition (as compared to 763 films in 1982). Of these, 702 films were in colour and 39 in black and white. Bombay, Calcutta and Madras are the most important production centres. Regionwise certification of Indian feature films reveals that the output of the southern region was more than the output of Bombay and Calcutta regions and accounted for nearly 63 per cent of the total film production. During 1983, as many as 202 Indian feature films were certified at Bombay, 71 at Calcutta and 468 at Madras.

In 1983, the Board of Film Certification granted U certificates to 490 Indian feature films, 64 foreign feature films, 1,474 Indian short films and 862 foreign short films; UA certificates to 33 Indian feature films, 6 foreign feature films, 2 Indian short films and A certificates to 218 Indian feature films, 54 foreign feature films, 9 Indian short films and 7 foreign short films. Twelve S certificates were issued to foreign short films, and one Indian short film. The total number of U certificates issued was 2,890, UA 41, A 288 and S 13.

The Board recertified a total of 1,097 films after expiry of the validity period of 10 years. Out of these, 1,067 films were granted U certificates and 30 A certificates.

Central Board of Film Certification

Films can be exhibited in India only after they have been certified by the Central Board of Film Certification. The Board, set up under the Cinematograph Act, 1952, consists of a Chairman and a minimum of 12 and a maximum of 25 members, all appointed by Government. The headquarters of the Board is at Bombay with regional offices at Bombay, Calcutta and Madras. Two new regional offices at Bangalore and Trivandrum are coming up. Another will be set up at Hyderabad. The regional offices are assisted in the examination of the films by advisory panels which include educationists, lawyers, social workers, medical practitioners, etc.

While applying the guidelines issued by the Government for purposes of certification of films, the Board takes steps from time to time to curb depiction of violence and vulgarity in films among other things.

The Cinematograph (Amendment) Act, 1981 came into force with effect from 1 June 1983. The Cinematograph (Censorship) Rules, 1958 were replaced by Cinematograph (Certification) Rules, 1983 from the same date. The salient features of the amended provisions of the Act and the Rules are :

(i) The nomenclature of the organisation was changed to the Board of Film Certification.

(ii) The number of members of the Board was increased from nine to not less than twelve and not more than twentyfive.

TABLE 10·7

OUTPUT OF FEATURE FILMS

Language	1951	1956	1961	1966	1971	1976	1978	1981	1982	1983
1. Assamese	—	3	2	2	5	5	6	5	5	
2. Bengali	38	54	36	30	30	32	37	42	49	4
3. Bhojpuri	—	—	—	—	1	—	1	5	3	11
4. Dogri	—	—	—	1	—	—	—	—	—	—
5. English	—	—	—	—	1	2	2	2	1	1
6. Gujarati	6	3	7	2	3	29	32	34	39	27
7. Garhwali	—	—	—	—	—	—	—	—	—	1
8. Hindi	100	123	109	108	120	106	122	153	148	132
9. Haryanvi	—	—	—	—	—	—	—	—	—	1
10. Kannada	2	14	12	21	33	45	54	65	51	72
11. Konkani	—	—	—	—	1	1	1	—	1	—
12. Khasi	—	—	—	—	—	—	—	—	—	1
13. Malayalam	7	5	11	31	52	84	123	111	117	112
14. Manipuri	—	—	—	—	—	1	—	—	—	3
15. Marathi	16	13	15	12	23	10	15	27	24	20
16. Nepali	—	—	—	1	—	—	1	—	2	2
17. Oriya	—	2	2	2	1	6	15	10	9	12
18. Punjabi	4	—	5	4	2	10	8	8	6	19
19. Sindhi	—	—	—	1	1	—	—	—	—	—
20. Silent	—	—	—	—	—	—	—	—	—	1
21. Sanskrit	—	—	—	—	—	—	—	—	—	1
22. Tamil	26	51	49	60	73	81	105	137	141	128
23. Telugu	20	27	55	41	85	93	94	132	154	134
24. Tulu	—	—	—	—	2	2	3	1	—	1
25. Rajasthani	—	—	—	—	—	—	—	2	3	4
26. Brijbhasha	—	—	—	—	—	—	—	—	1	—
27. Maithili	—	—	—	—	—	—	—	—	1	—
28. Malvi	—	—	—	—	—	—	—	—	1	—
29. Urdu	—	—	—	—	—	—	—	—	7	4
30. Kashmiri	—	—	—	—	—	—	—	—	—	1
TOTAL	219	295	303	316	433	507	619	737	763	741

Note :—Films produced in Hindustani, Maithili, Chhatisgarh and Urdu languages were included in the number of Hindi films certified earlier. However, individual break-up of these languages has been itnroduced in 1982.

(iii) In addition to the U and A certificates, two more categories were introduced, namely, UA and S. UA for unrestricted public exhibition subject to parental guidance for children below the age of 12 and S for public exhibition restricted to specialised audience such as members of the medical profession, etc.

(iv) Prior to the introduction of the amended Act, Government was the appellate authority for the appeals against the decisions of the Board. This appellate jurisdiction has been transferred to the Film Certification Appellate Tribunal.

(v) In cases of exhibition of films in contravention of the provisions of the Act relating to certification and rules made thereunder, the Government has now been vested with the power to suspend or revoke censor certificates.

(vi) Offences punishable under the provisions of the Act relating to certification of films have now become cognizable.

(vii) Penalty for offences has been enhanced.

(viii) With a view to checking whether the films as exhibited in theatres contain any interpolations, it has been provided in the new rules that the applicant should submit a copy of the film as certified or a video copy with the Board for a period of one year from the date of certification.

(ix) Time limits have been prescribed for certification of films.

Before granting the certificates U, UA, A (for exhibition to persons above the age of 18) and S, the Board may direct applicants to carry out excisions or modifications where necessary. The Board may also refuse a certificate to a film if it is against the interests of the state, friendly relations with foreign states, public order, decency or morality or involves defamation or contempt of court or is likely to incite the commission of an offence.

FILMS DIVISION

The Films Division provides audio visual publicity support to the Government's policies, plans and achievements. Division endeavours through its films to inform and educate the masses on important national events.

The Division produces one hour rural based featurette films in the regional languages of eastern and southern regions, including various dialects spoken in the tribal and backward areas of the concerned regions. These films are produced at the Division's regional production centres at Bangalore and Calcutta. The proposal for setting up a new production centre at Guwahati for producing special films for north eastern region has been approved in principle by the Government.

The Films Division, set up in 1948, with its headquarters at Bombay and functioning under the Chief Producer as its highest authority, aims to mobilize the use of the dynamic medium of film to disseminate information to the broadest spectrum of audience in India and abroad. The films produced by the Division for use in foreign countries project the image of the country with its grandeur and future developments.

The Films Division is responsible for production and distribution of documentaries, news magazines and other short films. The Division which had a modest start with the production of only 33 documentary films, 52 national newsreels and 12 compilations in 1949-50, increased its production to 50 national, 40 regional, 8 special newsreels, 3 colour news magazines, 3 Indian News Magazines and 5 colour Asiad News Magazines over and above the documentary production in 1982-83. Most of the films are produced in English and dubbed into 14 regional languages.

During 1983-84, in all 143 documentary films were produced, out of which 40 were produced through independent producers. It also included 11 featurette in 16mm produced by regional production centres.

The Films Division supplies 60,000 to 65,000 prints of its films for theatrical and non-theatrical distribution throughout India. Items from foreign countries are received from 18 organisations as part of an agreement on exchange of newsreel material. Important events within the country are covered by cameramen stationed at various centres in India.

Sometimes the events covered by film units of the state governments are also incorporated in colour news magazines. As per the new restructuring policy of the Government, Films Division will be producing only 52 documentaries—26 documentaries and 26 news magazines for theatrical release every year. All general release films are dubbed in 15 Indian languages.

Under the terms of its licence every cinema house in the country is to exhibit with each feature film an approved short film of maximum length of 609 metres. These are supplied by the Films Division on payment of (approx.) one percent of average weekly net collection as rental by the cinema houses. During 1983-84, the Division earned about Rs 4.5 crore by way of rentals from cinema houses while 11,094 films were supplied free of charge to various publicity units. The Division gives on loan prints to government and semi government departments, educational institutions, hospitals, charitable institutions, social welfare and other non profit making organisations through its 10 distribution branch offices located in different parts of the country.

Documentaries approved for external publicity are supplied to various missions abroad. These are utilised by the Indian missions for exhibiting in and outside their premises. Besides, the Films Division documentaries are also screened on television centres in India and abroad.

In 1983-84, five films produced by the Films Division won awards in various film festivals.

Exhibition Facilities

There has been a steady growth of exhibition facilities for showing films in the country. Table 10.8 gives the number of cinema theatres from 1977-78 to 1982-83.

TABLE 10.8
NUMBER OF CINEMA THEATRES

Cinema Theatres	1977-78	1978-79	1979-80	1980-81	1981-82	1982-83
Permanent .	6,030	6,216	6,405	6,667	6,991	7,149
Touring . .	3,521	3,744	4,157	4,146	4,248	4,533
TOTAL . .	9,551	9,960	10,562	10,813	11,239	11,682

ATIONAL ILM DEVE-OPMENT ORPORATION

The National Film Development Corporation was set up in April 1980, as a Central agency to promote good cinema in the country. The erstwhile Film Finance Corporation and the Indian Motion Pictures Export Corporation were merged in this Corporation. The primary aim of the Corporation is to plan, promote and organise the integrated development of the film industry.

inancing and roduction f Films

The Corporation finances and produces good films. To date, NFDC has financed over 140 films and 57 documentaries; and of the 112 films so far completed, 68 have won national and 23 international awards. NFDC finances films by eminent film makers also.

The Corporation recently decided to finance the production of featurettes i.e. films of approximately half-hour to one hour duration. Young and aspiring filmmakers will thus gain valuable working experience before they launch on full-length features. The market for these featurettes is TV net works in India and abroad.

Film and TV Co-production

The Corporation inaugurated its programme of co-production with no less than the tremendously successful *Gandhi* directed by Sir Richard Attenborough. The film has won eight Oscar Awards and various other awards for 1983 all over the world.

NFDC has also co-produced a 7-episode TV serial with M/s. Technisonor, a public sector undertaking of France. The German and French versions have already been telecast. In collaboration with Doordarshan and Films Division, NFDC plans to make films specially for television, both in India and abroad.

Financing Cinema Theatres

NFDC has introduced a scheme to extend financial assistance for the construction of cinema theatres, as shortage of exhibition outlets is a major obstacle in the development of good cinema. Of 71 loans sanctioned 28 cinema theatres have already been completed and started screening films.

Distribution and Exhibition

NFDC has built up a position of strength in the distribution of films in India. So far the Corporation has imported 268 films. One hundred and sixty four imported films were put in circulation in 1983.

NFDC's distribution programme extends to the non-commercial circuit of film societies, clubs, etc. It also procures playing time in existing theatres. The acquisition of Akashwani Theatre in Bombay is a great asset.

Export

The export of Indian feature films is canalised through NFDC. Its export teams are regular visitors to the major international film festivals. Besides sub-titled prints, the team carries a library of video cassettes and publicity material. NFDC has achieved a breakthrough in the TV markets of some of the major countries of the world. India exports films to over 80 countries. NFDC has an office at London, other offices are to follow.

mports

The Corporation presently imports around 50 films a year. Since 1975, it has imported 268 films. There has been a conscientious attempt to expose Indian audience to a variety of films from different countries.

Raw Stock and Equipment

Raw stock is canalised through NFDC so as to ensure equitable distribution at reasonable prices. Presently over 50,000 rolls of different types of colour negatives are distributed to film makers every year. The Corporation also provides finance to talented technicians for the purchase of modern equipment. So far, loans have been given to 5 applicants.

Special Projects

The production of 16mm films is fast gaining popularity as it substantially reduces cost. Many of NFDC's films are being made in 16mm and blown up directly to 35mm for exhibition purposes.

To boost 16mm film movement in the country, NFDC has set up a complete 16mm production infrastructure consisting of 16mm cameras, tape-recorders for synchronous shooting, editing tables and re-recording equipment at Calcutta.

NFDC has set up a sophisticated and modern sub-titling unit in Bombay—so that quality sub-titled prints are available.

With the video cassette having revolutionised display methods to prospective buyers, NFDC has set up a video cassette unit in Madras to transfer films on to cassettes and also to produce pre-recorded cassettes for export and home market. The centre is equipped with the latest transfer equipments.

Film Festivals

The Directorate of Film Festivals was transferred to NFDC in July 1981 and is entrusted to organise (a) international film festivals, (b) national film festival, (c) film weeks under cultural exchange programmes in India and abroad and (d) to participate in international film festivals.

The scheme of National Film Festival (earlier called National Awards for Films) was instituted in 1953. It aims at promoting India's film art by acknowledging outstanding achievements in 28 categories of film art and film making. This includes an award on the best book on cinema instituted in 1982 for the first time. The golden lotus (*Swaran Kamal*), the silver lotus (*Rajat Kamal*) and cash prizes are given under the national awards scheme. The scheme consists of all-India and regional awards. The regional awards are meant for films produced in the principal languages of the country. Besides, the Dadasaheb Phalke Award, instituted in 1969, is given for the outstanding contribution to the cause of Indian cinema. The Phalke Award is decided by the Government and entries for the National Film Festival are examined by the two national juries for films, one for short films and the other for feature films.

For the 31st National Film Festival (feature films certified in 1983), the best feature film adjudged was *Adi Shankaracharya* (the first film to be made in Sanskrit) directed by G. V. Iyer and the award for the best screenplay was also given for the film to him. The Nargis Dutt award for the best feature film of national integration was given to the Hindi film *Sookha* directed by M. S. Sathyu. The award for the best direction was given to Mrinal Sen for his work in the Hindi film *Khandhar*. Om Puri won award for the best actor for his performance in the Hindi film *Ardh Satya* and Shabana Azmi for the best actress for her role in the Hindi film *Khandhar*. The award for the best male playback singer went to S. P. Balasubramaniam and for female playback singer to P. Suseela.

The Dada Saheb Phalke award for 1983 was conferred on Durga Khote. She has had over a span of 50 years, a distinguished career as an actress, director and producer. She has appeared in about 200 films.

The earlier recipients of Phalke awards are : Devika Rani (1969), Birendra Nath Sircar (1970), Prithviraj Kapoor (1971, posthumously), Pankaj Mullick (1972), Ruby Meyers popularly known as Sulochana (1973), B. N. Reddi (1974), Dhiren Ganguly (1975), Kanan Devi (1976), Nitin Bose (1977), Rai Chand Boral (1978), Sohrab Modi (1979), P. Jairaj (1980), Naushad Ali (1981) and L. V. Prasad (1982).

NATIONAL FILM ARCHIVE OF INDIA

The National Film Archive of India was established in February 1964 to acquire and preserve the heritage of national and international cinema, film classification, documentation, research, encouraging film study and dissemination of film culture. Its collection on 31 December 1983 consisted of 9,050 films, 1,113 micro films, 12,511 scripts, 1,522 disc-records, 32,209 stills, 4,272 wall posters, 3,140 song booklets, 4,791 pamphlets, 12,414 books and 214 periodicals. Notable among its acquisitions are several silent and talkie films made in the early days of cinema in India and abroad, as well as, recent award winning Indian and foreign films.

The Archive holds regular screenings of classic films, conducts short term courses on film appreciation at Pune and other centres for the promotion of healthy film culture. It assists Doordarshan in the production of *Bate Filmo Ki,* the programme series on film appreciation for national telecast. It maintains a distribution library of over fifty classic Indian and foreign films for the benefit of film societies and film study groups throughout the country for non-commercial study screenings.

The National Film Archive of India is a member of the International Federation of Film Archives. It collaborates with UNESCO for organising regional seminars and workshops for development of film archives in Asian region and building up a computer data base for film and TV production in Asia-Pacific region.

With headquarters at Pune, the Archive has three regional offices at Bangalore, Calcutta and Trivandrum.

HILDREN'S ILM OCIETY

The Childrens Film Society India (CFSI) was established in 1955 as an autonomous body with the objective of promoting and encouraging neo-youth film movement in the country. The aim is to provide the children and the young people films with clean and healthy entertainment. With this motto the, organisation is engaged in production, acquisition, distribution and exhibition of the films suitable for the children and the young people.

The main office of the Society is in Bombay and zonal offices are at New Delhi, Madras and Calcutta.

Since its inception the Society has produced and purchased nearly 98 feature films and 130 short films.

The Society organises festivals in India and participates in important international film festivals abroad. In India, the first international festival was arranged in Bombay in 1979. Madras became the venue for holding the second festival in 1981. The third was held in Calcutta in November 1983.

The Society has reoriented its distribution pattern and launched a new programme to carry cinema to the rural and urban areas to involve younger generation in neo-youth film movement.

Four children's film clubs, one at Bombay, two at Thane and one at Kolhapur are functioning under the auspices of the society. A club has also been formed in Sadulpur, Rajasthan.

WORKING GROUP ON NATIONAL FILM POLICY

Arising from a recommendation of the Conference of State Information Ministers held in New Delhi in November 1977, the Ministry of Information and Broadcasting appointed a Working Group on National Film Policy under the Chairmanship of Dr. K. S. Karanth to suggest an integrated national film policy. The group, which made 231 recommendations submitted a report to the Government on 2 June 1980. These recommendations touched various sectors of the film industry like production, distribution and exhibition system, film technology and raw-stock, taxation policy, censorship and labour legislation, etc. Some of the recommendations have been accepted by the Government, others are at various stages of consideration.

DIRECTORATE OF ADVERTISING AND VISUAL PUBLICITY

The Directorate of Advertising & Visual Publicity (DAVP) is the central agency of the Government for publicising the policies, programmes and performances of the various ministries (except Railways), departments and autonomous bodies through the widest range of communication media such as press advertising; printed publicity material like posters, folders, brochures, booklets, wall hangers, etc; outdoor publicity items like hoardings, kiosks, cinema slides, wall paintings and transit advertising on buses, tramcars and railway coaches; audio-visual media such as radio and television commercials, short advertisment films and photographic exhibitions. It is one of the biggest advertising agencies in the country using over 2,700 newspapers and periodicals for press advertising. The Directorate has 40 field exhibition units spread all over the country, including 6 mobile vans and two exhibition rail coaches. Its exhibitions are designed and fabricated for display all over the country. It has one of the largest direct mail services and can readily reach more than 14 lakh addresses all over the country.

Multi-Media Publicity

Multi-media compaigns of the Directorate are launched to inform, educate and motivate the people on matters of immediate and long term interest. During 1983-84 major publicity campaigns were organised for the Revised 20-Point Programme, communal harmony and national integration, health and family welfare, welfare of the weaker sections of the society and eradication of social evils like untouchability and dowry. Publicity support was also provided to major national and international events. Other major campaigns, aimed at educating the people about agro-economic developments in the country, storage of foodgrains, balanced diet, mobilisation of national savings, civil rights, duties and obligations of the tax payers, popularisation of handlooms and handicrafts, etc., were also taken up.

Exhibitions

The Directorate organised 991 exhibitions during 1983-84. The major thrust of the exhibitions was to promote communal harmony and national integration and to project the benefits under the Revised 20-Point Programme. The titles of two exhibitions were *Ek Rashtra Ek Pran* and *Ek Jati Ek Pran Ekta*. To reach the maximum number of people, exhibitions were prominently displayed at crowd points like fairs, festivals and annual events in various parts of the country.

Particular attempts were made to cover places not covered before, specially in rural and semi-urban areas.

Advertisements

Advertisements in various newspapers/journals on behalf of various ministries (except Railways) and departments of Government are released to the press by the Directorate. A number of autonomous bodies and public sector undertakings also channelise their advertisements through DAVP. Keeping in view the advertising policy of the Government, specific publicity requirements and budgetary allocations, a balanced and equitable placement of advertisements is aimed at. In pursuance of the broad social objectives of the Government, appropriate weightage/consideration is given to small and medium newspapers/journals, specialised, scientific and technical journals, languages newspapers/periodicals and newspapers/journals published especially from backward, border and remote areas.

The DAVP also accredites advertising agencies to enable them to undertake publicity work of public sector enterprises and autonomous bodies.

Awards for Printing and Designing

The Directorate organises a competition every year for the national awards for excellence in printing and designing of books and other publications in order to generate healthy competitive endeavour for higher standards in printing, designing and layout. The 24th National Awards were announced in 1984 and a total of 299 awards were given to about 194 winners under 53 categories.

Distribution

The DAVP maintains an address bank of over 14 lakh addresses covering over 480 categories of target audience, most of which belong to rural categories like panchayats, primary/high schools, block development offices, rural post offices, rural libraries, etc., for the mailing of its various printed publicity material.

FIELD PUBLICITY

The Directorate of Field Publicity is the larest medium of interpersonal communication in the country, with an annual coverage of about seven crores of people. Its main objective is to enthuse the people with a sense of confidence and to actively involve them in nation-building activities.

With its country-wide network, the Directorate has a distinct role to play in development, transformation and change. Its activities are carried out through various modes of modern and traditional mass media like filmsfi, song and drama programmes, display/distribution of print material, conducted tours, public meetings, group discussions, seminars, symposia, debates and essay competitions. It puts its men and material face-to-face with the people for explaining and interpreting Government's basic policies and programmes at the grass-root level. It almost remains on the wheels all the year round to cover remote and backward areas. In its programmes the Directorate secures the active involvement of official and non-official functioneries. Spontaneous public reactions to the policies and programmes of the Government are also collected. The Organisation, thus, assimilates as also disseminates the information.

The Directorate is a three-tier organisation (a) headquarter in New Delhi; (b) regional Offices at state/union territory capitals/ important cities/towns; and (c) field publicity units at state/union territory capitals/district headquarters/important centrally locate towns. For administrative convenience, some small states and unio territories have been grouped together to form one region, wherea in some cases some larger and highly populated states have bee divided into two regions for efficient functioning. The present network of the Directorate is : 22 regional offices and 257 field publicit units. Of the total units, 72 concentrate their activities in the borde areas and 30 carry out intensive publicity on family welfare in the areas where population growth rate is high. Every field publicit unit is equipped with a vehicle, cine equipment, a generator, public address equipment, a transistor and a tape recorder.

During 1983, the units organised nearly 74,000 film shows, staged about 3,300 song and drama programmes, arranged 34,600 oral communication programmes and covered an audience numbering over 7 crore from different segments of society. In order to reach maximum number of people, important fairs and festivals were suitabily covered. There were examples where interior areas were covered by reaching them through bullock carts, camels and even by foot-marches.

SONG AND DRAMA DIVISION

The Song and Drama Division of the Ministry of Information and Broadcasting established in 1954, utilises live entertainment media to make the masses aware of the various national programmes and objectives. It uses a wide range of stage forms like puppet shows, plays, dances, dance dramas, ballads, *harikathas* and sound and light shows for this purpose. These programmes are organised through functional 41 departmental troupes spread all over the country and about 500 private parties registered with the Division. Several central and state agencies are also used for arranging programmes in the field. The Division presents various types of programmes for the masses, which include both rural and urban, as well as tribal people even in remotest areas. The Division has an armed forces entertainment wing. It was established in 1967 for the entertainment of the armed forces posted along the international borders.

In 1969 with the presentation of *Vision 1919*—a programme on the Jallianwala Bagh massacre, the Division created Theatre Panosonic—a sound and light spectacle with live action by a large number of artists which could be seen from different angles by spectators at a time. The Division has presented lives of great persons *viz.* Guru Nanak, Subramania Bharati, Amir Khusro, Vidyapati, Akbar, Krishna Devaraya. A great spectacle of freedom struggle and epic story of *Ramcharit Manas* were the ever highlights of this medium. A mini programme based on family welfare has also gained popularity.

A pilot project to utilise tribal folk forms by the tribal for the tribals has taken off to a good start at Ranchi. This is to bring over the tribals into the national mainstream and solicit their active participation in national developmental endeavours.

TRAINING

Training in mass communication is available in a number of institutions in the country. There are twenty five universities which offer degree/diploma/certificate courses in this field.

TAFF RAINING ISTITUTE PROGRAM- IES)

The Staff Training Institute (Programmes), All India Radio, New Delhi imparts training to in-service personnel of AIR as also for guest trainees from foreign broadcasting organisations in the planning and production of all types of programmes. Training is also given in programme administration and audience research and other allied topics. Special efforts are being made to train the programme staff as they enter service in planning, production and broadcast including broadcast management. The Institute also arranges training for trainees from abroad. They are usually sponsored under the Colombo Plan, the Special Commonwealth African Assistance Plan and other cultural exchange programmes.

The Institute has two regional training centres—one at Hyderabad and the other at Shillong.

TAFF RAINING NSTITUTE Technical)

The Staff Training Institute (Technical) has the responsibility of imparting in-service training to the engineers of All India Radio and Doordarshan. The Institute runs basic orientation course and induction course for the new entrants into the service. It also arranges specialised courses on various subjects. Trainees from foreign countries are also accommodated in these courses under the Colombo Plan and other Technical Co-operation Programmes.

ILM AND ELEVISION NSTITUTE OF INDIA

The Film and Television Institute of India (FTII) was set up at Pune in 1960 for training in the art and craft of film. Training in TV was introduced later when FTII became an autonomous body in October 1974.

The film wing of the Institute offers three-year specialisation courses in (1) motion picture photography, (2) film editing, (3) film direction with one and half years' integrated training, and (4) sound recording and sound engineering with one year integrated training. The television wing offers in-service training for the employees of Doordarshan. Apart from its general course, short-term specialised courses in television production are also organised.

A one-month course in film appreciation conducted in collaboration with National Film Archive of India, Pune, is a regular annual feature of the Institute.

NDIAN NSTITUTE OF MASS COMMUNICA- TION

The Indian Institute of Mass Communication (IIMC) was set up by the Ministry of Information and Broadcasting in August 1965 as a centre for training and research in mass communication. It was made autonomous in January 1966. The Institute's instruction courses cover developmental journalism, the print media, audio-visual aids and films, radio and television oral communication, traditional media, advertising, campaign planning and communication research.

The regular training courses offered at this Institute are : (i) a nine-month post-graduate diploma course in journalism for graduates from Indian universities and foreign scholars with journalistic background from developing countries; (ii) an eight-month diploma course in news agency journalism for persons from news agencies of non-alingned countries; (iii) a nine-month post-graduate diploma course in advertising and public relations; (iv) a ten-week course in broadcast journalism for AIR and TV personnel; (v) a six-month to 15 months orientation course for officers of the Central Information Service Group A and B. Besides, there are several short courses of two to six weeks duration designed for middle-level—Information Publicity and Public Relations personnel of the central ministries, state governments, public sector undertakings and non-official organisations.

In addition to training courses, the IIMC organises or collaborates with other institutions in organising seminars on professional problems concerning the media.

The Institute brings out a number of books and pamphlets on different aspects of mass communication and conducts research on national and international communication problems. It brings out *Communicator,* a quarterly in English and *Sanchar Madhyam,* a half-yearly journal in Hindi.

ADVISORY COMMITTEE

An Advisory Committee was constituted by the Government in November 1980 to make recommendations from time to time regarding the restructuring of the various media organisations under the Ministry of Information and Broadcasting and also how best they could function in a more professional and efficient manner. The 14-member Committee consisting of eminent mediamen was formed under the chairmanship of G. Parthasarthi.

The terms of reference of the Advisory Committee are to advise the Government on : (a) structural changes in the different media organisations under the Ministry and, if necessary in the Ministry itself to bring about greater professional efficiency and improvement in the quality of performance of the media in response to wide-ranging national requirements and aspirations: (b) measures to be taken at the national, state, regional and local levels to associate the people more directly in the planning and initiation of innovative programmes in the different media organs under the jurisdiction of the Ministry, through creative participation and inter-communication so as to enrich their cultural identity and promote national integration; (c) determining priorities in different areas of media development and providing adequate infrastructural support and strengthening the capacity of the media to reach out to all sections of the people; (d) the mode and mechanics of co-ordination amongst various media groups under the Ministry and of co-operation between the central and state media organisations with a view to maximising the impact of the communication support for developmental efforts; and (e) any other related matter referred to the Committee by the Government for advice.

The Committee has to make recommendations from time to time on the various areas included in the terms of reference. So far, it has made four recommendations relating to grant of pension to staff artistes of Akashvani and Doordarshan, news policy for broadcast media, introduction of colour TV in the country and the publishing activities of the Publications Division.

11 BASIC ECONOMIC DATA

India is rich in natural resources and manpower. These resources have, however, not been exploited fully and are capable of greater utilisation. The Indian economy is still predominantly agricultural, a little over one third of the country's national income is derived from agriculture and allied activities, which absorb about two thirds of its working force. Since 1947, the aim has been to diversify the economy.

ABLE 11.1
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ACTOR COST

Item	1970-71	1976-77	1978-79[1]	1979-80[1]	1980-81[1]	1981-82[1]	1982-83[2]
Net national product at factor cost (Rs crore)							
at current prices	34,235	66,754	81,195	88,506	1,05,834	1,21,989	1,34,066
at 1970-71 prices	34,235	40,271	46,398	43,830	47,312	49,639	50,486
Per capita net national product (Rs)							
at current prices	632·8	1,076·7	1,251·1	1,332·9	1,558·7	1,757·8	1,890·9
at 1970-71 prices	632·8	649·5	714·9	660·1	696·8	715·3	712·1
Index number of net national product with 1970-71 as base							
at current prices	100·0	195·0	237·2	258·5	309·1	356·3	391·6
at 1970-71 prices	100·0	117·6	135·5	128·0	138·2	145·0	147·5
Index number of per capita net national product with 1970-71 as base							
at current prices	100·0	170·1	197·7	210·6	246·3	277·8	298·8
at 1970-71 prices	100·0	102·6	113·0	104·3	110·1	113·0	112·5
Gross national product at factor cost (Rs crore)							
at current prices	36,452	71,231	86,890	95,131	1,13,882	1,31,740	1,45,141
at 1970-71 prices	36,452	42,902	49,403	46,896	50,603	53,227	54,187
Index number of gross national product with 1970-71 as base							
at current prices	100·0	195·4	238·4	261·0	312·4	361·4	398·2
at 1970-71 prices	100·0	117·7	135·5	128·7	138·8	146·0	148·7

1. Provisional estimates
2. Quick estimates

TABLE 11·2

NATIONAL PRODUCT AND RELATED AGGREGATES

(at current prices)

(Rs in crore)

Item	1970-71	1974-75	1976-77	1977-78[2]	1978-79[2]	1979-80[2]	1980-81[2]	1981-82[2]	1982-83[3]
(a) Gross national product at factor cost	36,452	62,972	71,231	80,433	86,890	95,131	113,882	131,740	145,141
(b) Add indirect taxes less subsidies	3,527	6,332	8,533	8,917	10,534	12,184	13,905	16,931	19,258
(c) Gross national product at market prices (a+b)	39,979	69,304	79,764	89,350	97,424	107,315	127,787	148,671	164,399
(d) Less consumption of fixed capital	2,217	3,526	4,477	4,954	5,695	6,625	8,048	9,751	11,075
(e) Net national product at market prices (c—d)	37,762	65,778	75,287	84,396	91,729	100,690	119,739	138,920	153,324
(f) Less net factor income from abroad	(—)284	(—)291	(—)233	(—)233	(—)156	(+)153	(+)298	(—)7	(—)7
(g) Net domestic product at market prices (e—g)	38,046	66,069	75,520	84,629	91,885	100,537	119,441	138,927	153,331
(h) Net domestic product at factor cost	34,519	59,737	66,987	75,712	81,351	88,353	105,536	121,996	134,073
(i) Less income from entrepreneurship and property accruing to government administrative departments	574	805	1,598	1,790	1,856	1,981	2,135	2,438	3,174
(j) Less saving of non-departmental enterprices	70	419	601	327	442	344	170	1,180	1,440
(k) Income from domestic product accruing to private sector (h—i—j)	33,875	58,513	64,788	73,595	79,053	86,028	103,231	118,378	129,459
(l) Add national debt interest	216	340	601	697	934	1,008	1,490	1,842	2,643
(m) Add net factor income from abroad	(—)284	(—)291	(—)233	(—)233	(—)156	(+)153	(+)298	(—)7	(—)7
(n) Add current transfers from government administrative departments	578	1,150	1,547	1,762	2,005	2,392	2,835	3,311	4,019
(o) Add other current transfers from the rest of the world (net)	123	274	739	1,022	1,042	1,624	2,257	2,221	2,189
(p) Private income (k+l+m+n+o)	34,508	59,986	67,442	76,843	82,878	91,205	110,111	125,745	138,303
(q) Less saving of private corporate sector, net of retained earnings of foreign companies	193	677	259	356	518	990	1,084	1,209	1.221
(r) Less corporation tax	370	709	984	1,221	1,251	1,392	1,377	1,970	2,239
(s) Personal income (p—q—r)	33,945	58.600	66,199	75,266	81,109	88,823	1,07,650	1,22,566	1,34,843
(t) Less direct taxes paid by households	721	1,259	1,792	1,657	1,806	1,995	2,197	2,501	2,756
(u) Less miscellaneous receipts of government administrative departments[1]	162	196	246	239	282	282	303	371	383
(v) Personal disposable income (s—t—u)	33,062	57,145	64,161	73,370	79,021	86,546	105,150	1,19,694	131,704

1. Available data do not permit separation of fees, fines, etc., paid by producers and to that extent personal disposable income is under estimate.
2. Provisional estimates.
3. Quick estimates.

PERFORMANCE OF PUBLIC SECTOR
(at current prices)

(Rs in crore)

Item	1970-71	1976-77	1977-78[1]	1978-79[1]	1979-80[1]	1980-81[1]	1981-82[1]	1982-83[2]
Gross domestic product	36,736	71,464	80,666	87,046	94,978	1,13,584	1,31,747	1,45,148
Public	5,456	14,379	15,697	17,452	20,071	23,442	28,662	34,588
Private	31,280	57,085	64,969	69,594	74,907	90,142	1,03,085	1,10,560
Share of public to total (per cent)	14·9	20·1	19·5	20·0	21·1	20·6	21·8	23·8
Gross domestic saving	6,783	17,905	19,762	24,081	24,839	29,214	34,146	37,062
Public	1,253	4,185	4,168	4,780	4,967	4,640	7,439	7.431
Private	5,530	13,720	15,594	19,301	19,872	24,574	26,707	29,631
Share of public to total (per cent)	18·5	23·4	21·1	19·8	20·0	15·9	21·8	20·2
Gross domestic capital formation[3]	7,344	17,669	18,548	22,933	26,228	31,443	36,680	40,435
Public[4]	2,773	8,513	7,450	9,649	11,816	13,922	17,444	19,849
Private[4]	4,571	9,156	11,098	13,284	14,412	17,521	19,236	20,586
Share of public to total (per cent)	37·8	48·2	40·2	42·1	45·1	44·3	47·6	49·1
Final consumption expenditure	33,639	62,472	71,830	77,627	85,572	1,02,818	1,17,265	1,27,104
Public administration	3,801	8,206	8,667	9,624	11,025	13,033	15,292	18,186
Private household and non-profit institutions	29,838	54,266	63,163	68,003	74,547	89,785	1,01,973	1,08,918
Share of public to total (per cent)	11·3	13·1	12·1	12·4	12·9	12·7	13·0	14·3

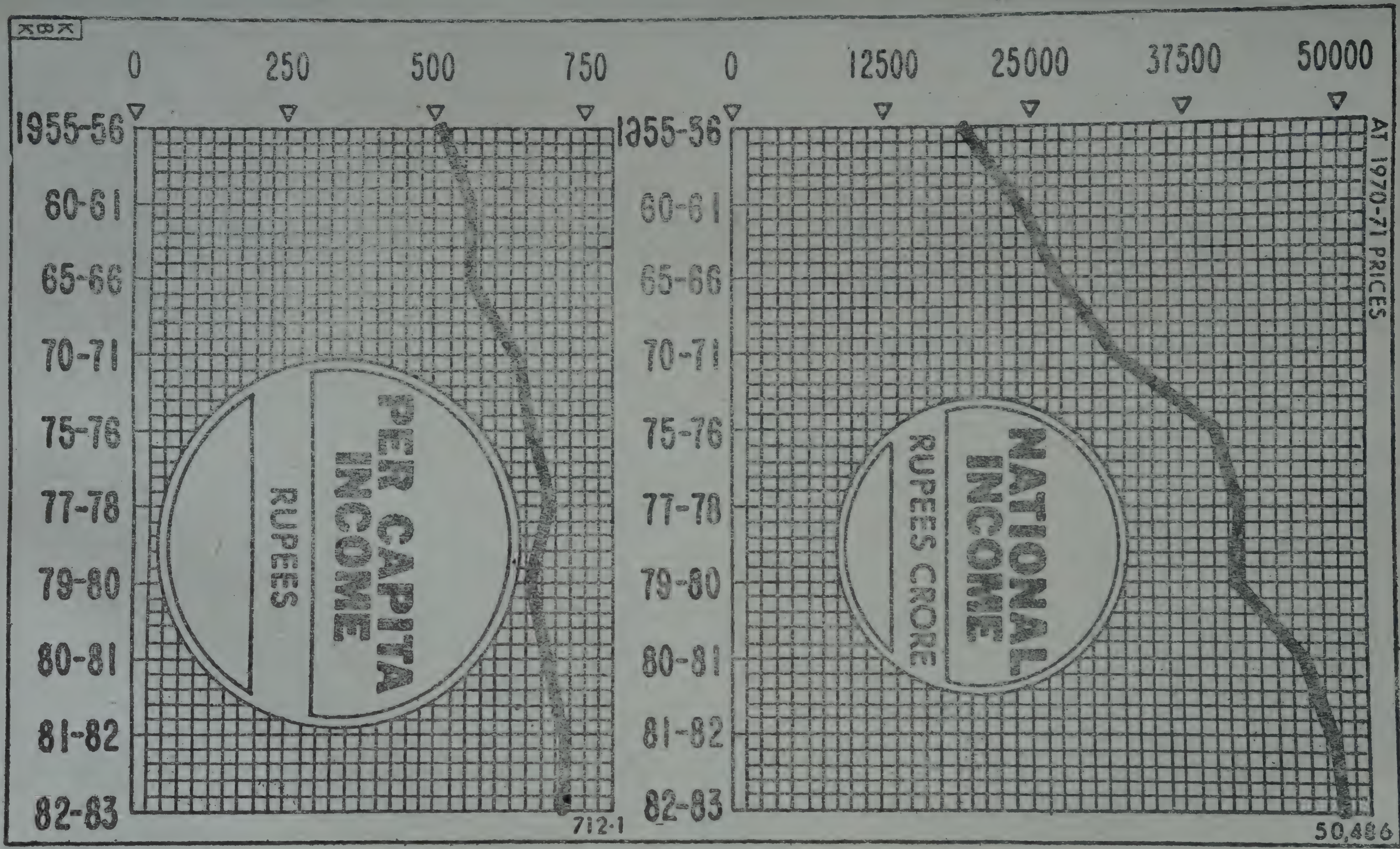
1. Provisional estimates.
2. Quick estimates.
3. Unadjusted for errors and omissions.
4. Including net purchase of second-hand physical assets.

TABLE 11.4

PRIVATE CONSUMPTION, SAVING AND CAPITAL FORMATION

Year	Private final consumption expenditure in domestic market (Rs crore)		Per capita private final consumption expenditure in domestic market (Rs)		Net domestic saving (Rs crore)	Rate of saving[1] (per cent)	Net domestic capital formation		Rate of capital formation (per cent)[1]
	at current prices	at 1970-71 prices	at current prices	at 1970-71 prices	at current prices	at current prices	at current prices	at 1970-71 prices	at current prices
1970-71 . .	29,838	29,838	551.5	551·5	4,566	12·0	4,960	4,960	13·0
1971-72 .	32,097	30,704	579·4	554·2	5,099	12·4	5,577	5,262	13·6
1972-73 . .	35,131	30,070	619·6	530·3	5,100	11·3	5,397	4,667	11·9
1973-74 . .	42,933	30,880	740·2	532·4	8,369	15·0	8,761	6,629	15·7
1974-75 . .	52,041	31,113	877·6	525·2	9,127	13·8	9,780	5,850	14·8
1975-76 . .	52,992	33,467	873·0	551·4	10,800	15·4	10,683	5,915	15·3
1976-77 . .	54,266	33,194	875·3	535·4	13,428	17·8	12,119	6,618	16·0
1977-78[2] . .	63,163	36,810	996·3	580·6	14,808	17·5	13.343	7,198	15·8
1978-79[2] . .	68,003	38,153	1,047.8	587·9	18,386	20·0	18,514	9,275	20·1
1979-80[2] . .	74,547	36,706	1,122·7	552·8	18,214	18·1	18,794	8,069	18. 7
1980-81[2] . .	89,785	40,039	1,322·3	590·4	21,166	17·7	23.270	8,853	19·5
1981-82[2] . .	1,01,973	41,087	1,469·4	592·0	24,395	17·6	27,013	8,937	19·4
1982-83[3] . .	1,03.918	41,260	1,536·2	581·9	25,595	16·7	28,505	8,557	18·6

1. Per cent of net domestic product at market prices.
2. Provisional estimates.
3. Quick estimates.



AT 1970-71 PRICES
NATIONAL INCOME
RUPEES CRORE
0
12500
25000
37500
50000
1955-56
60-61
65-66
70-71
75-76
77-78
79-80
80-81
81-82
82-83
50,486
PER CAPITA INCOME
RUPEES
0
250
500
750
1955-56
60-61
65-66
70-71
75-76
77-78
79-80
80-81
81-82
82-83
712·1
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NATIONAL AND PER CAPITA INCOMES

National income in India is defined as the sum of incomes accruing to the factors of production supplied by normal residents of the country before deduction of direct taxes. It is identically equal to net national product at factor cost. Table 11.1 gives the estimates of national and per capita incomes at current and 1970-71 prices.

Table 11.2 gives national product and related aggregates at current prices. Table 11.3 gives the performance of public sector. Table 11.4 gives the private final consumption expenditure, net domestic saving and capital formation since 1970-71.

Table 11.5 gives distribution of net domestic product, compensation of employees, mixed income of self-employed, interest, rent and profits and dividends.

CATEGORIES OF WORKERS

For the 1981 census, the population was divided into main workers, marginal workers and non-workers. The figures of only these broad groups are available. In the 1971 census, the population was divided into workers and non-workers. There were 9 categories of workers, which is shown in table 11.6. It shows the number of workers and non-workers in rural and urban areas as on 1 March 1981 as compared to those on 1 April 1971. Employment in the organised sector has been shown in table 11.7.

TABLE 11.6
Population by Categories of Workers and Non-Workers

(In crore)

	Rural	Urban	Total
1981 census			
Total population	52·55[1]	15·97[1]	68·52[1]
Main workers[2]	17·64	4·61	22·25
Marginal workers[2] . . .	2·09	0·12	2·21
Non-workers[2]	31·03	11·04	42·07
1971 census			
Total population	43·91	10·91	54·82
Workers	14·85	3·20	18·05
(i) cultivators . . .	7·66	0·17	7·83
(ii) agricultural labourers .	4·56	0·19	4·75
(iii) livestock, forestry, fishing, etc.	0·38	0·05	0·43
(iv) mining and quarrying . .	0·06	0·03	0·09
(v) manufacturing, processing, etc.	0·82	0·89	1·71
(vi) construction . . .	0·11	0·11	0·22
(vii) trade and commerce . .	0·36	0·64	1·00
(viii) transport, storage and communication	0·12	0·32	0·44
(ix) other services . . .	0·78	0·80	1·58
Non-workers	29·06	7·71	36·77

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1. Excludes Assam and that portion of Jammu and Kashmir which are under the illegal occupation of China and Pakistan.

2. Includes the projected population of Assam, where census was not held in 1981 owing to disturbed conditions.

TABLE 11·5

DISTRIBUTION OF FACTOR INCOMES AT CURRENT PRICES

(Rs in crore)

Item	1970-71	1976-77	1977-78[2]	1978-79[2]	1979-80[2]	1980-81[2]	1981-82[2]
(i) Compensation of employees	13,363	26,533	30,673	33,688	37,377	43,121	49,651
(ii) Interest	1,802	5,049	5,680	6,529	7,531	8,560	10,209
(iii) Rent	1,748	2,944	3,120	3,514	3,848	4,116	4,794
(iv) Profits and dividends	1,494	3,989	3,926	4,200	4,663	5,020	6,926
(v) Mixed income of self-employed[1]	16,112	28,472	32,313	33,420	34,934	44,719	50,416
(vi) Net domestic product	34,519	66,987	75,712	81,351	38,353	1,05,536	1,21,996

[1] Income of own account workers and profits of un-incorporated enterprises. [2] Provisional estimates.

TABLE 11·7

EMPLOYMENT IN ORGANISED SECTOR

(in lakh)

	March 1975[1]	March 1976[1]	March 1977	March 1978	March 1979	March 1980	March 1981	March 1982	March 1983[2]
Public Sector									
Central Government	29·88	30·47	30·82	30·96	31·34	31·78	31.95	32·49	32·60
State Government	47·42	48·97	50·20	51·60	53·09	54·78	56·76	58·53	60·01
Quasi-government	31·92	33·92	36·75	39·29	41·70	43·43	45·76	48·12	50·75
Local bodies	19·40	19·85	19·89	20·15	20·63	20·80	20·37	20·33	20·95
TOTAL	128·62	133·22	137·66	142·00	146·76	150·78	154·84	159·46	164·32
Private Sector (non-agricultural)									
Larger establishments (employing 25 or more workers)	60.98	61·13	61·37	63·22	64·65	64·84	66·00	67·33	67·21
Smaller establishments (employing 10 to 24 workers)	7·09	7·31	7·30	7·21	7·42	7·43	7·95	8·14	8·03
Total	68·06	68·44	68·67	70·43	72·08	73·27	73·95	75·47	75·23
Grand Total	196·68	201·65	206·33	212·43	218·84	223·05	228·79	234.93	239·55

[1] Data for Manipur is not included in March 1975 and March 1976 due to non-receipt from state government. [2] Provisional

Unemployment

The number of persons on the live register of employment exchanges gives an idea of the trend of unemployment, subject to certain limitations. Employment exchanges cover mainly urban areas. Registration with the employment exchanges being voluntary, not all the unemployed register their names in the exchanges. Further, some of the registrants are already employed but have registered for seeking better employment. The number of job-seekers on the live registers of employment exchanges increased from 34.24 lakh as on 31 December 1969 to 162.00 lakh as on 31 December 1980, 178.38 lakh as on 31 December 1981 and 197.53 lakh as on 31 December 1982. Table 11.8 gives the occupational distribution of registrants with the employment exchanges as on 31 December 1982.

TABLE 11.8 APPLICANTS ON THE LIVE REGISTER OF EMPLOYMENT EXCHANGES

Occupational Group	Number as on 31 December 1982 ('000)	Percentage to total
Professional, technical and related workers, administrative, executive and managerial workers	9,27·5	4·7
Clerical and related workers	7·8	—
Sales workers	10,22·7	5·2
Farmers, fishermen, hunters, loggers and related workers	2·7	—
Service workers	87·1	0·4
Production and related workers, transport equipment operators and labourers	4,74·8	2·4
Workers not classified by occupations	15,59·7	7·9
(a) Below matric including illiterates and others	71,67·2	36·3
(b) Matric and above but below graduates	70,70·6	35·8
(c) Graduates and above	14,32·7	7·3
Total	1,97,53·0	100·0

NATIONAL SAMPLE SURVEY ORGANISATION

The National Sample Survey (NSS) was set up in 1950, with the objective of obtaining comprehensive and continuing information relating to social, economic, demographic, industrial and agricultural statistics through sample surveys on a countrywide basis. The NSS was reorganised in 1970 and all aspects of its work were entrusted to a single government agency, National Sample Survey Organisation (NSSO). The NSSO has four functional divisions, namely (i) Survey, Design and Research, (ii) Field Operations, (iii) Data Processing, and (iv) Economic Analysis. The activities of NSSO are governed by a governing council. Five zonal training centres have been set up for imparting training to the technical staff of the field operations division.

The NSSO covers the fields of socio-economic, industrial and agricultural statistics. It carries out annual rounds of socio-economic surveys on different subjects. The subject programme conforms to a well defined cycle of surveys extending over a period of ten years. These include surveys on (i) demography, health and family welfare, (ii) asset, debt and investment, (iii) land holdings and livestock enterprises to be repeated once in ten years, (iv) employment, rural labour and consumer expenditure, and (v) unorganised enterprises in non-agricultural sector to be repeated once in five years. Surveys on other subjects of interests to users are either dovetailed with one of the foregoing surveys or taken in a year open to other topics.

Industrial statistics are obtained under the Collection of Statistics Act, 1953, and the Annual Survey of Industries, covering over 50,000 manufacturing establishments registered under the Factories Act, 1948, provides information on capital investment, quantity and value of the goods manufactured, value added by manufacture, employment and emoluments. The collection of data is made by NSSO while the Central Statistical Organisation processes data and releases the results.

In the field of agricultural statistics, NSSO provides technical guidance to the states for the conduct of crop estimation surveys. A scheme for improvement of crop statistics has been in operation since 1973-74 to help locate areas of weakness and to take necessary remedial measures.

An idea of the scale of survey operations NSSO undertakes can be had from the fact that the socio-economic surveys in each annual round cover about two lakh households spread over 9,000 sample villages and 5,000 sample urban blocks. The check of area and yield of crops are spread over 5,000 sample villages and 15,000 crop cutting experiments. State governments participate in the socio-economic and agricultural surveys by canvassing a matching sample of the same size as the central sample; some states do even more. In respect of Annual Survey of Industries too, some states collect data from non-census factories, not covered in a given year by the NSSO.

The NSSO conducted a large scale nation wide sample survey on employment, unemployment and consumer expenditure during January-December 1983. This survey was the third quinquennial survey on these subjects.

A pilot methodological study on household income, saving and consumer expenditure is currently in progress since September 1983 in 5 states, namely, Maharashtra, Orissa, Tamil Nadu, Uttar Pradesh and Haryana and the cities of Calcutta and Delhi to evolve a suitable methodology as a prelude to undertake a full-fledged survey on household income and savings.

The NSSO is carying out a survey on population, births and deaths since January 1984.

The NSSO as a major fact finding body, occupies a unique position in the nation's statistical system. Over the years, it has enlarged and diversified the data base, specially, in areas which are vital for development planning.

The findings from the National Sample Surveys have been brought out in the form of individual reports, each covering particular aspect for all the states. The NSSO has now a journal of its own, namely, *Sarvekshana* and the results are being published in the journal for individual states as and when they become available.

rices

The index numbers of wholesale prices have been revised from base 1961-62=100 to 1970-71=100 and the old series were discontinued from April 1977. In the revised classification, commodities are distributed under three major groups, namely (i) primary articles, (ii) fuel, power, light and lubricants and (iii) manufactured products. The groups are further divided into sub-groups.

The primary articles group is broadly comparable with the two groups of the old classification, *viz.*, "food articles" and "industrial raw-materials" with certain minor adjustments. The third group "manufactured products" contains sub-groups under which semi-manufactured and manufactured products have been classified.

Table 11.9 gives the index numbers of wholesale prices for 1971-72 and from 1976-77 to 1982-83 with revised base 1970-71=100.

Consumer Prices The all-India working class consumer price index on base 1949=100 has been replaced by a new series of consumer price index numbers for industrial workers on base 1960=100 with effect from August 1968. Table 11.10 shows the consumer price index numbers for industrial workers for 1970-71 to 1982-83 along with indices for some selected centres, which are among the 50 centres covered and a weighed average of whose indices yield the All India Index.

Whereas in 1981-82, the all India general index showed an increase of 50 points over that of the previous year, during 1982-83, the all-India general index rose by 35 points and the all-India food index by 80 points.

TABLE 11.10
CONSUMER PRICE INDEX NUMBERS FOR INDUSTRIAL WORKERS

(Base : 1960=100)

Year	Bombay	Ahmadabad	Calcutta	Madras	Kanpur	Delhi	All India	
							All items	Food
1970-71	182	176	182	170	190	199	186	204
1971-72	190	181	187	182	196	211	192	205
1972-73	203	198	197	203	212	222	207	223
1973-74	233	245	228	229	251	265	250	279
1974-75	289	305	288	301	323	337	317	358
1975-76	300	293	287	314	299	333	313	342
1976-77	298	281	297	288	294	332	301	317
1977-78	318	310	320	311	330	358	324	345
1978-79	325	323	331	318	337	368	331	347
1979-80	359	348	351	350	357	389	360	373
1980-81	400	376	382	388	396	426	401	419
1981-82	460	441	414	446	439	472	451	428
1982-83	502	487	447	475	473	508	486	508

Figures from February 1970 onwards are from the Labour Bureau's New Series on base 1960=100.

Table 11·11 gives the index numbers of consumer prices for urban non-manual employees for 1970-71 to 1982-83.

TABLE 11.11
CONSUMER PRICE INDEX NUMBERS URBAN NON-MANUAB EMPLOYEES

(Base : 1960=100)

Year	Bombay	Calcutta	Madras	Delhi/ New Delhi	All India
1970-71	168	170	175	174	174
1971-72	172	174	188	180	180
1972-73	183	180	203	190	192
1973-74	204	204	231	217	221
1975-76	246	243	306	273	227
1976-77	255	251	294	274	277
1977-78	269	265	311	288	296
1978-79	285	279	321	303	306
1979-80	315	297	350	321	330
1980-81	347	331	390	352	369
1981-82	393	367	439	395	413
1982-83	440	384	470	428	446

INDEX NUMBERS OF WHOLESALE PRICES

Base : 1970-71=100

Item	Weight	1971-72	1976-77	1978-79	1979-80	1980-81	1981-82	1982-83
I. Primary articles	416·67	100·9	167·2	181·4	206·5	237·5	264·4	273·9
Food articles	297·99	101·1	155·3	172·4	186·6	207·9	235·1	249·6
Non-food articles	106·21	98·6	167·4	170·4	194·6	217·7	240·5	244·6
Fibres	31·73	106·6	184·9	169·3	168·1	179·7	215·7	199·5
Oilseeds	42·01	89·9	150·8	158·9	185·7	230·7	253·8	250.5
Minerals	12·47	115·4	449·4	490·7	779·9	1,110·2	1,168·6	1,105·6
II. Fuel, power, light and lubricants	84·59	105·9	230·8	244·7	283·1	354·3	427·5	459·7
III. Manufactured products	498·74	109·5	175·2	179·5	215·8	257·3	270·6	272·1
Food products	133·22	118·4	189·1	157·0	214·8	308·7	298·9	260·0
Beverages, tobacco and tobacco products	27·08	106·8	168·2	178·2	186·6	210·7	217·4	218·7
Textiles	110·26	109·6	155·3	179·0	203·2	212·7	223·9	232·8
Paper and paper products	8·51	110·4	180·1	196·0	237·4	262·2	282·2	299·7
Leather and leather products	3·85	115·7	227·8	265·4	345·0	380·1	368·0	361·3
Rubber and rubber products	12·07	101·7	157·2	181·9	214·9	248·8	284·1	306·1
Chemical and chemical products	55·48	101·5	171·4	177·2	198·7	241·3	260·2	269·2
Non-metallic mineral products	14·15	109·3	191·0	213·7	249·5	278·7	311·7	373·7
Basic metals, alloys and metal products	59·74	104·7	190·1	211·2	251·9	272·1	317·1	354·6
Machinery and transport equipment	67·18	105·3	170·1	183·9	215·9	239·4	265·1	277·9
Miscellaneous products	7·20	102·5	166·0	187·8	209·8	232·8	239·5	243·2
IV. All commodities	1,000·0	105·6	176·6	187·8	217·6	257·3	281·3	288·6

ECONOMIC CENSUS

The Central Statistical Organisation in collaboration with the State Statistical Bureaus took a major step in 1977 to remove data gaps in the unorganised sectors of non-agricultural economy covering unregistered manufacturing, trade, transport and services by launching a Central plan scheme on economic censuses and surveys. The first economic census of non-agricultural establishments employing at least one hired worker on regular basis, carried out during the last quarter of 1977, provided basic information on the number of establishments, number of persons usually working, the nature of activity and other characteristics such as type of ownership, social group of owner, etc. Following the census, sample surveys of selected establishments in different sectors based on the first-Economic Census frame were taken up during 1978-79 and 1979-80 to collect detailed information relating to employment, investment, quantity/value of input and output, etc.

The second Economic Census was synchronised with the houselisting operations conducted in 1980 as a prelude to the 1981 census. It covered all enterprises engaged in economic activity other than crop production and plantation in all the states and union territories excluding Assam.

Findings

Major findings as revealed by the provisional results of 1980 economic census are :

There were 186 lakh enterprises engaged in different economic activities other than crop production and plantation with 524.9 lakh persons usually working in them. Amongst these enterprises, 171.1 lakh enterprises (92 per cent) were involved in non-agricultural activities and the remaining 14.9 lakh (8 per cent) were in agricultural activities other than crop production and plantation. Rural areas accounted for 61 per cent of the total enterprises. The share of rural areas in the number of non-agricultural and agricultural enterprises were 58.6 and 86.9 per cent respectively. Establishments i.e. enterprises which employed at least one hired worker on regular basis constituted 25.9 per cent of total enterprises and own-account enterprises which were owned and operated with the help of household labour only accounted for the rest (74.1 per cent). It is important to note that 84 per cent of agricultural enterprises were own-account enterprises and the remaining 16 per cent were establishments. In the case of non-agricultural enterprises, around three-fourth of total non-agricultural enterprises were own-account enterprises and the establishments accounted for about one-fourth of total non-agricultural enterprises.

Considering all enterprises together, around one-fifth of total enterprises were working without a fixed premises. Less than one-tenth of the total enterprises were of seasonal nature. About four-fifth of the total enterprises were working without power/fuel. Nearly one-tenth of the enterprises were owned by scheduled castes. Private enterprises accounted for nearly nine-tenth of the total enterprises.

Of the total 524.9 lakh persons usually working 241.2 lakh persons (46 per cent) were in the enterprises located in the rural areas. Hired workers numbering 284.4 lakh constituted 54 per cent of the total persons. In regard to employment in agricultural enterprises, only 5 per cent of total 524.9 lakh persons were working in the agricultural enterprises. The share of rural areas in respect of employment in agricultural enterprises was 85 per cent. Number of persons working in non-agricultural enterprises was 496.1 lakh constituting 95 per cent of total persons. Among the total persons working in non-agricultural enterprises, 216.6 lakh were in the rural areas of which 42.1 per cent were hired labour. About two-third of the 279.5 lakh persons working in the non-agricultural enterprises located in the urban areas were hired workers.

In short, the 1980 Economic Census has revealed that non-agricultural enterprises accounted for 92 per cent of the total number of enterprises and 95 per cent of the total persons working usually in them.

12

FINANCE

PUBLIC FINANCE

The power to raise and disburse public funds has been divided unde the Constitution between the Union Government and state govern ments. There are thus more than one budget and more than on public treasury in the country. The sources of revenue for the unio and the states are, by and large, mutually exclusive, if shareable taxe and duties between them are excluded.

The Constitution provides that (i) no tax can be levied or collecte except by authority of law, (ii) no expenditure can be incurred fro public funds, except in the manner provided in the Constitution, an (iii) the executive authorities must spend public money only in th manner sanctioned by Parliament in the case of the Union and by th state legislature in the case of a state.

All receipts and disbursements of the Union Government are kep under two separate headings, namely, the Consolidated Fund of Indi and the Public Account of India. All revenues received, loans raise and money received in repayment of loans by the Union Governme go to form the Consolidated Fund. No money can be withdrawn fro this Fund except under the authority of an Act of Parliament. A other receipts, such as, deposits, service funds and remittances g into the Public Account, and the disbursements therefrom are n subject to the vote of Parliament. To meet unforeseen needs, n provided in the Annual Appropriation Act, a Contingency Fund India has been established under Article 267(1) of the Constitution.

The Constitution provides for the establishment of a Consolidate Fund, a Public Account and a Contingency Fund for each state.

The Railways, the largest public undertaking presents their budg separately to Parliament. The appropriations and disbursemen under the railway budget are subject to the same form of Parliamen tary control as other appropriations and disbursements. However, a the railway's have no separate cash balance of their own, the total receipts and disbursements of the railways are incorporated in the budget of the Union Government as part of the General Budget.

urces of evenue

The main sources of union revenues are customs duties, union excise duties and the corporation and income taxes. The Railways and Posts and Telegraphs also pay to the Union Government dividend on the capital invested in them.

The main heads of revenue in the states are the taxes and duties levied by state governments, the share of taxes levied by the Union Government and grants received from the Union. Property taxes and octroi and terminal taxes are the mainstay of local finance.

ransfer of esources

The devolution of resources from the Union to the states is a salient feature of the system of federal finance in India. Apart from their share of taxes and duties, state governments receive statutory and other grants as well as loans for various development and non-development purposes. The total amount of resources transferred to the states during each Plan period is shown in table 12.1

ABLE 12.1 ESOURCES RANSFERRED STATES

(Rs in crore)

Period	Taxes and Duties	Grants	Loans	Total (2+3+4)
First Plan . . .	344	288	799	1,431
Second Plan . . .	668	789	1,411	2,868
Third Plan . . .	1,196	1,304	3,100	5,600
Annual Plans				
1966-67 . . .	373	419	916	1,708
1967-68 . . .	417	471	869	1,757
1968-69 . . .	492	499	891	1,882
	1,282	1,389	2,676	5,347
Fourth Plan . . .	4,562	3,831	6,708	15,101
Fifth Plan . . .	8,273	8,197	8,965	25,435
Annual Plan				
1979-80 . . .	3,406	2,288	2,697	8,391
Sixth Plan				
1980-81 . . .	3,791	2,652	3,087	9,530
1981-82 . . .	4,274	2,727	3,522	10,523
1982-83 . . .	4,639	3,455	5,924	14,018
1983-84 . . .	5,246	4,286	5,530	15,062
1984-85 . . .	5,739	4,819	5,214	15,772
	23,689	17,939	23,277	64,905

inance ommission

Under the Constitution, a Finance Commission is to be constituted every fifth year or at such earlier time as the President considers necessary to make recommendations to the President as to (i) the distribution between the Union and the states of the net proceeds of taxes which are to be, or may be, divided between them and the allocation between the states of the respective shares of such proceeds; (ii) the principles which should govern the grants-in-aid of the revenues of the states in need of such assistance out of the Consolidated Fund of India, and (iii) any other matter referred to the Commission by the President in the interests of sound finance. The recommendations of the Commission together with an explanatory memorandum as to the action taken thereon are laid before each House of Parliament. Eight Finance Commissions had been constituted since the commencement of the Constitution.

The Eighth Finance Commission submitted an interim report on 14 November 1983 covering 1984-85. The recommendations made by the Commission in the report were accepted by the Government in toto.

The Eighth Finance Commission submitted its final report on 30 April 1984. Since the budgets and the annual plans for the Centre as also for most of the states for 1984-85 had already been finalised, the Government decided to continue with the financial arrangements brought about under the recommendations of the Commission contained in its interim report. For the remaining four years 1985-89 Government accepted the recommendations of the Finance Commission contained in its final report.

The fiscal transfers to states on the basis of the recommendations of the Eighth Finance Commission for the five year period 1984–89 were estimated by the Commission at Rs 39,452 crore, representing a step up of over 89 per cent on the transfers envisaged by the Seventh Finance Commission for 1979-84.

The scheme of transfers confers a surplus of Rs 26,775 crore on twelve states. Grants-in-aid of Rs 1,513 crore have been recommended to cover deficits of eleven states. Out of these, Rajasthan is eligible for grant-in-aid in the first two years only. It has been assessed to have a surplus in the remaining three years. The deficit states have been given the benefit of annual growth of 5 per cent in grants payable to them during the five year period. Additional grants-in-aid of Rs 509.29 crore have been recommended in the case of eleven deficit states for covering the cost of additional dearness allowance for state government employees on par with the Central Government employees. Grants-in-aid of Rs 914.55 crore to sixteen states have been recommended for upgradation of standards of administration in the fields of police, education, jail, tribal administration, health, judicial administration, district and revenue administration, training and treasury and account administration. Grants of Rs 52.78 crore over the five year period have also been recommended to ten states for tackling special problems. The Commission also recommended Central contribution of about Rs 602 crore over the five year period representing half of the margin money payable to all the twenty-two states for financing of relief expenditure in connection with the natural calamities.

While the share of income tax has been retained at 85 per cent the states' share of Union excise has been increased from 40 to 45 per cent. The extra 5 per cent of the states' share of Union excise has been earmarked for exclusive distribution to the eleven deficit states in proportion to their assessed deficits. For the first time, uniform formula for distribution of states' share of Union excise an bulk of the income tax has been recommended. The quantum of th annual compensatory grant in lieu of tax on railway passenger fare has been enhanced from Rs 23 crore to Rs 95 crore and its distribution to the states has been linked to the non-suburban passenger earnings in each state. On this basis, Manipur, Meghalaya and Sikkin have come to have a share in this amount for the first time. Th Commission has recommended retention of the existing principles i regard to the distribution of proceeds of estate duty and the grants o account of Wealth tax on agricultural property.

The Commission recommended debt relief of Rs 2,285.39 crore t states through consolidation and rescheduling of Central loans outstanding at the end of 1983-84 for the five year period. Besides, relief of Rs 117.08 crore has been recommended in respect of repayment of small savings loans in 1984-85.

As a result of the Government's decision to effect transfers t states in 1984-85 in terms of the interim report of the Eighth Financ Commission and to accept the recommendations of the Commissio contained in its final report for the four years only, the total transfer of resources to states by way of devolution of taxes and duties anc grants-in-aid are estimated to amount to Rs 38,500 crore over th five year period together. Consequent on the Government's decisio there would be some reduction in the debt relief derived by the state from that recommended by the Eighth Finance Commission.

Budgetary Position

Table 12.2 shows the budgetary position of the Union Governmen from 1977-78 onwards.

Annual Financial Statement or Budget

An estimate of all anticipated receipts and expenditure of the Unio Government for the ensuring financial year is laid before Parliamen on the last working day of February every year. This is known as th 'Annual Financial Statement' or the 'Budget' and covers the Centra Government's transactions of all kinds in and outside India occurrin during the year in which the statement is prepared as well as the ensuing year or the Budget Year as it is known.

The presentation of the Budget is followed by a general discussio on it in both the Houses of Parliament. The estimates of expenditur from the Consolidated Fund of India are also placed before the Lo Sabha in the form of 'Demands for Grants' along with the budge All withdrawals of money from the Consolidated Fund are thereafte authorised by an Appropriation Act passed by Parliament every yea The tax proposals of the Budget are embodied in another bill which i passed as the 'Finance Act' of the year.

Estimates of receipts and expenditure are similarly presented b state governments to their legislatures before the beginning of th financial year and legislative sanction for expenditure is secured throug similar procedure.

AUDIT AND ACCOUNTS

In 1976-77 a major reform was introduced in the financial an accounts administration, when departmentalised system of accoun came into existence in all the Central Ministries and Department The Comptroller and Auditor General was relieved of the responsibil ty for compiling their accounts. This reform was taken up to ensu

TABLE 12.2

BUDGETARY POSITION OF THE GOVERNMENT OF INDIA

(*Rs in crore*)

Major Head	1977-78	1978-79	1979-80	1980-81	1981-82	1982-83	1983-84 Revised Estimates	1984-85 Budget Estimates
I. Revenue Account								
A. Revenue	9,792·11	11,240·14	11,337·30	12,828·35	15,574·19	18,091·30	20,964·32	24,016·41
B. Expenditure	9,363·10	10,948·02	12,033·48	14,530·44	15,867·63	19,345·63	23,339·43	26,341·99
C. Surplus (+) or Deficit (—)	(+)429·01	(+)292·12	(—)696·18	(—)1,701·89	(—)293·44	(—)1,254·33	(—)2,375·11	(—)2,325·58
II. Capital Account								
A. Receipts	5,227·12	6,283·42	5,478·97	8,872·00	9,448·43	12,483·05	15,964·31	16,756·93
B. Disbursements	6,398·24	8,083·97	7,159·51	9,646·44	10,546·89	14,627·64	15,684·63	16,193·54
C. Surplus (+) or Deficit(—)	(—)1,171·10	(—)1,800·55	(—)1,680·84	(—)774·44	(—)1,098.46	(—)2,144·59	(+)279·68	(+)563·39
III. Overall Surplus (+) or Deficit(—) Financed by	(—)742·11	(—)1,508·43	(—)2,377·02	(—)2,476·33	(—)1,391·90	(—)3,398·92	(—)2,095·43	(—)1,762·19
A. Increase (+) or Decrease(—) in Treasury Bills	(—)3,250·69	(+)1,010·53	(+)2,587·89	(—)2,654·56	(—)921·80[1]	(—)7,158·68	(+)1,882·00	(—)1,762·12
B. Cash Balance								
Opening	359·69	2,868·27	349·53	560·40	738·63	268·56	4,028·32	50·89
Closing	2,868·27	349·31	560·40	738·63	268·53	4,028·32	50·89	50·82
C. Increase (+) or Decrease (—)	(+)2,508·58	(—)2,518·96	(—)210·87	(+)178·23	(—)470·10	(+)3,759·76	(—)3,977·43	(—)0.07

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[1] Includes Rs 3,500 crore worth of ad hoc treasury bills converted into special securities.

timely flow of information about progress of expenditure on projects and to facilitate effective monitoring of and control over expenditure and receipts of Central Government.

In states, and some union territories, accounts have not been separated from audit and the Comptroller and Auditor General, not only maintains their accounts but also audits the receipts and expenditure of the state governments and his reports on the accounts along with the annual accounts prepared under his guidance are submitted to the respective Governors|Lt.-Governors for having them laid before legislatures.

Controller General of Accounts

The organisation of the Controller General of Accounts (CGA) was set up as part of the Ministry of Finance (Department of Expenditure) in October 1976 after the separation of accounts from audit. It deals with various accounting matters, which *inter alia* include the functions of prescribing the form of Accounts relating to Union and state governments; and laying down accounting procedures framing and revising rules and manuals relating thereto; overseeing the maintenance of adequate standards of accounting by Central Civil Accounts Offices; consolidation of monthly and annual accounts of the Government of India (including preparation of Summary Civil Appropriation Accounts), co-ordination and assistance in the introduction of Management Accounting Systems in Civil Ministries or Departments, administration of rules framed under Article 283 of the Constitution relating to the custody of the Consolidated Fund of India and the Contingency Fund of India; the payment, into and withdrawal of money from these funds and the custody, etc., of moneys in the Public Account of India.

CGA prepares the condensed form of the Appropriation Accounts (Civil) and the Finance Accounts of the Union Government, which after audit by the Comptroller and Auditor General, are placed on the tables of both Houses of Parliament, along with reports of the Comptroller and Auditor General thereon.

Accounts of the union territories of Delhi, Andaman and Nicobar Islands, Pondicherry and Goa, Daman and Diu are also separated from audit.

ORGANISATIONS

The Department of Revenue exercises control in respect of revenue matters relating to direct and indirect Union taxes through two statutory Boards, namely, the Central Board of Direct Taxes and the Central Board of Excise and Customs. The Department is entrusted with the administration and enforcement of controls and regulatory measures provided in the enactments concerning central sales-tax, stamp duties, gold control, foreign exchange and other relevant fiscal statutes. Control over production and disposal of opium and its products produced or manufactured in the country and co-ordination of anti-smuggling activities of the Government are also vested in the Department.

Through the tax laws and their administration, the Department seeks to achieve three main objectives, namely, to build up an atmosphere of mutual trust between the tax gatherers and the tax payers, to tackle the problems of tax evasion and reduce the tax arrears and also to give incentives by suitable legislation in furtherance of the socio-economic policies.

Direct Taxes

Table 12.3 gives the number of persons paying taxes (assessees) and figures of revenue collection under various major direct taxes :

TABLE 12.3
DIRECT TAXES

Taxes	No. of Assessees (in lakh) during 1982-83	Amount of Revenue Collected (Rs in crore)		
		1981-82	1982-83	1983-84 (BE)
1. Income-tax	47·97	1,475·50	1,569·72	1,669·60
2. Corporation tax	—	1,969·96	2,184·51	2,510·25
3. Interest-tax (reintroduced) from 1 July 1980	—	231·67	265·47	156·00
4. Taxes on Wealth	4·22	80·76	90·33	90·00
5. Gift tax	1·33	7·97	7·71	8·50
6. Estate duty	0·35	20·50	20·38	19·00

Table 12.4 gives the incidence of income-tax at selected levels of incomes of individuals for the assessment year 1984-85 :

TABLE 12.4
INCIDENCE OF INCOME TAX AT SELECTED LEVELS

Income (Rs)	Tax including surcharge at the rate of 12.5 per cent (Rs)	Effective rate per cent
15,000	Nil	Nil
20,000	1,406	7·03
25,000	3,094	12·38
30,000	5,063	16·88
40,000	9,563	23·91
50,000	14,063	28·13
60,000	19,688	32·81
70,000	25,594	36·56
80,000	31,781	39·73
90,000	38,109	42·34
1,00,000	44,578	44·58
1,50,000	78,328	52·22
2,00,000	1,12,078	56·04
2,50,000	1,45,000	58·33
3,00,000	1,79,578	59·86
4,00,000	2,47,078	61·77
5,00,000	3,14,578	62·92
10,00,000	6,52,078	65·21

Combating Tax Evasion

The Income-tax Department continue its drive against blackmarketing and tax evasion. During 1983, 4,349 searches and seizures operations were carried out resulting in the seizure of assets valued at Rs 27.95 crore. During the year 10,10,095 new tax assessees and 1,914 Wealth Tax assessees have been discovered through survey operations. Seven hundred ninety two prosecutions of concealment of Income-tax|Wealth tax were launched during 1983.

Combating Smuggling

The Smugglers and Foreign Exchange Manipulators (Forfeiture of Property) Act, 1976 is to combat the menace of smuggling and foreign exchange racketeering in the country. It seeks to forfeit the illegally acquired properties (movable and immovable) of the smugglers, foreign exchange manipulators and of their relatives and associates.

Under the Act five competent authorities with their headquarters at Delhi, Madras, Bombay, Calcutta and Ahmadabad have been appointed for implementation of the Act. During 1983-84, upto 29 February 1984 the competent authorities have issued orders in 1,453 cases involving properties both movable and immovable which amounted to Rs 14.56 crore approximately in value. Forfeiture proceedings have been initiated in respect of 2,391 cases (including 1,453 cases as above wherein orders of forfeiture have been passed) and the approximate value of properties covered (both movable and immovable) by these proceedings is Rs 38.31 crore approximately.

ect Taxes

The Customs and Central Excise Duties are most important source of Government revenues. These duties account for Central revenue roughly three-fourth of the total revenues of the Union.

Table 12.5 gives collection figures in respect of Customs and Central Excise Duties during the last three years.

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(Rs in crore)

Head	1981-82	1982-83	1983-84 (Budget Estimate)
Union Excise Duties	7,402·71	7,950·97	9,990·27
Customs Duties	4,202·09	5,045·18	5,879·03

The taxation measures undertaken during the recent years intend to achieve various socio-economic objectives of the Government. The tariff mechanism has been increasingly employed to encourage higher level of production, to attract large investments in important sectors of industry, to support to balance of payments, to ensure industrial expansion to promote small scale sector with a view to make available goods to the consumer at reasonable prices, to minimise tax evasion and to raise the revenue collection.

On the Customs side, setting up of inland container depots and facilities of warehousing and quick payment of draw back duties were undertaken during the recent years. With a view to facilitating speeder clearance of international passengers, provisions relating to duty structure of baggage were rationalised and liberalised.

India has been playing an increasingly important role in international customs affairs by participating in a number of meetings of International Customs Co-operation Council with headquarters at Brussels.

The Government is firm to fight socio-economic evils like smuggling, hoarding, tax evasion and black money. The drive against smuggling and foreign exchange racketeering was intensified during 1983. As a result, the Customs authorities had effected over 63,900 seizures of contraband goods valued at Rs 89 crore during 1983 as against Rs 66 crore worth of goods seized during 1982. About 2,076 persons were arrested for offences relating to smuggling during 1983. The provisions of COFEPOSA Act were applied with added vigour against smugglers|foreign exchange marketeers during 1983. As against 524 detention orders issued and 443 persons detained under the COFEPOSA Act during 1982, 563 detention orders were issued and 463 persons were detained during 1983.

On the Central Excise side, Government continuously make efforts to rationalise Central Excise Tariff and simplify procedures, etc. As a result of various anti evasion measures 5,719 cases of evasion of duty were detected from January to November 1983. The amount of duty evased in respect of these cases works out to approximately Rs 40.48 crore. Prosecutions were launched against 49 persons|firms during this period for offences relating to evasion of excise duties.

Sales Tax

Sales tax is the most important source of revenue to the states. Levy of taxes on the sale or purchase of goods other than newspapers taking place within a state is a state subject of taxation. The administration of taxes on the sale of goods where such sale takes place in the course of inter-state trade or commerce under the Central Sales Tax Act, 1956 has been entrusted by law to the state governments who retain the proceeds of such tax.

The total collection of sales tax including Central Sales Tax, General Sales Tax, tax on motor spirit and purchase tax on sugar during 1983-84 is estimated at Rs 6,437 crore. The total collection for 1983-84 from additional excise duty in lieu of sales tax on sugar, tobacco and textiles is estimated at Rs 628 crore.

The Expert Committee on replacement of Sales Tax on *vanaspati*, drugs and medicines, cement, paper and paper boards, and petroleum products, set up in pursuant of the resolution adopted at the Chief Ministers Conference held on 15 February 1981 submitted its report on 29 January 1983. The report was considered in a conference of Chief Ministers held on 2 November 1983 at New Delhi. The conference unanimously resolved that efforts should be continued to bring about consensus among the state governments on the various issues involved in the proposal for replacement of sales tax by additional excise duty on these five items.

PUBLIC DEBT

Public debt includes *internal debt* comprising borrowings inside the country like market loans compensations and other bonds, treasury bills issued to Reserve Bank, state governments, commercial banks and other parties as well as non-negotiable non-interest bearing rupees securities issued to international financial institutions; and the *external debt* comprising loans from foreign countries, international financial institutions, etc.

The outstanding public debt of the Government is estimated to be Rs 73,906 crore at the end of 1984-85. Table 12.6 gives an analysis of the public debt outstanding at the end of selected years since 1950-51.

MONETARY AGGREGATE AND CURRENCY

Money supply comprises currency with the public, and demand deposits with the banks including the Reserve Bank of India, withdrawable on demand. The money supply with the public (MI) stood at Rs 31,205 crore at the end of 1983, of which currency with the public accounted for Rs 18,164 crore and deposit money Rs 13,041 crore. In 1983, money supply showed an increase of Rs 2,741 crore as compared with that of Rs 3,865 crore in 1982. Component-wise currency with the public and deposit money witnessed increases of Rs 2,536 crore and Rs 205 crore respectively during 1983 as compared with the expansion of Rs 1,849 crore and Rs 2,016 crore respectively in

TABLE 12·6

PUBLIC DEBT OF THE GOVERNMENT OF INDIA

(*Rs in crore*)

	1950-51	1960-61	1965-66	1979-80	1980-81	1981-82	1983-84 RE	1984-85 BE
Internal Debt								
(i) Market Loans	1,438·46	2,555·72	3,415·27	12,945·90	15,625·65	18,533·70	26,229·84	30,329·78
(ii) Market Loans in course of repayment	6·49	22·73	33·72	51·60	50·64	51·00	53·29	53·29
(iii) Treasury Bills	358·02	1,106·29	1,611·82	10,196·17	12,850·73	10,272·53	15,549.22	17,584.22
(iv) Special Bearer Bonds . .	—	—	—	—	—	964·39	964·28	964·28
(v) Compensation and other Bonds .	—	19·08	15·13	65·45	212·12	185·86	497·97	577·81
(vi) Special floating and other Loans	212·60	274·18	340·70	1,060·33	2,124·85	1,535·85	2,180·62	2,402·45
(vii) Treasury Deposit receipt and other floating Loans . .	6·73	—	—	—	—	—	—	—
(viii) Special Securities issued to the Reserve Bank	—	—	—	—	—	4,110·00	4,570·00	4,890·00
Total Internal Debt . . .	2,022·30	3,978·00	5,416·64	24,319·45	30,863·99	35,653·43	50,045·22	56,801·83
External Debt	32·03	760·96	2,590·62	9,963·96	11,298·03	12,327·75	15,311·07	17,104·56
Total Public Debt . . .	2,054·33	4,738·96	8,007·26	34,283·41	42,162·02	47,981·18	65,356·29	73,906·39

1982. The trends in money supply and its components since 1978 are indicated in table 12.7.

TABLE 12.7 MONEY SUPPLY WITH THE PUBLIC

(*Rs in crore*)

End of December	Currency with the Public		Deposit money with the Public		Money supply with the Public	
	Amount	Annual Variation	Amount	Annual Variation	Amount	Annual Variation
1978 .	9,454	+1,044	7,020	—2,321	16,474	—1,277
1979 .	10,797	+1,343	7,746	+ 726	18,543	+2,069
1980 .	12,591	+1,794	9,071	+1,325	21,662	+3,119
1981 .	13,779	+1,118	10,820	+1,749	24,599	+2,937
1982 .	15,628	+1,849	12,836	+2,016	28,464	+3,865
1983 .	18,164	+2,536	13,041	+ 205	31,205	+2,741

Note : From 1978 scheduled commercial Banks have classified a larger proportion of their savings deposits as time liabilities and a lower proportion as demand liabilities on the basis of a new classification. Therefore, the data on deposit money with the public and money supply with the public are not comparable with those of earlier years.

During 1983, the expansion of money supply with the public at Rs 2,741 crore was lower than that of Rs 3,865 crore in 1982. This smaller growth of money supply during 1983 was brought about largely by a smaller expansion in net bank credit to government sector by Rs 4,933 crore compared with the increase of Rs 5,961 crore in previous year. The rise of Rs 6,540 crore in bank credit to commercial sector in 1983 was, however, lower than that of Rs. 8,001 crore in 1982. Government currency liabilities to the public rose up by Rs 13 crore as compared to a rise of Rs 30 crore at the end of 1982. The expansionary impact of these factors on money supply was partly reduced by a decline of Rs 455 crore in net foreign exchange assets of banking sector compared to the decline of Rs 1,703 crore in 1982 and increase of Rs 8,290 crore in its non-monetary liabilities compared with the rise of Rs 8,424 crore last year.

Money supply showed further increase of Rs 2,741 crore to Rs 31,205 crore during 1983. Component-wise currency with the public and deposit money were Rs 18,164 crore and Rs 13,041 crore respectively at the end of 1983. As in 1982, monetary expansion during 1983 was largely due to substantial increase of Rs 4,933 in net bank credit to government sector compared with that of Rs 5,961 crore last year. The increase in bank credit to commercial sector was of the order of Rs 6,540 crore, which was lower than Rs 8,001 crore in 1982 played secondary role in monetary expansion. Government's currency liabilities to the public rose by Rs 13 crore in 1983. The growth in money supply was moderated by decrease of Rs 455 crore in net foreign exchange assets of banking sector and an increase of Rs 8,290 crore in its non-monetary liabilities during 1983.

CURRENCY

During 1981, currency in circulation recorded an increase of Rs 1,237 crore (to Rs 14,717 crore) as compared with Rs 1,886 crore in 1980.

The expansion of Rs 2,150 crore in currency in circulation during 1982 was shared by two components. Bank notes, rupee coin (including one rupee notes) increased by Rs 2,136 crore and Rs 14 crore respectively. On the other hand, in 1981 bank notes and small coins increased by Rs 1,195 crore and Rs 18 crore respectively. At the end of 1982 bank notes, rupee coin (including one rupee notes) and small coin in circulation stood at Rs 16,192 crore, Rs 360 crore and Rs 315 crore respectively.

BANKING

Although some form of banking, mainly of the money lending type, has been in existence in India from ancient times, it was only a little over a century ago that modern banking took its birth. The earliest institutions which undertook banking business under the British regime were the agency houses, which carried on banking business, in addition to their trading activities. Most of these agency houses were closed down during 1929-1932. A number of banks which came into existence between the thirties and forties of the last century were also in great trouble. Prominent among these were three presidency banks which were later amalgamated into the Imperial Bank of India in 1919 following a banking crisis.

The first bank on limited liability managed by Indians was the Oudh Commercial Bank founded in 1881. Subsequently, the Punjab National Bank was established in 1894. The Swadeshi movement which began in 1906 encouraged the formation of a number of commercial banks. The banking crisis in 1913-1917 and the failure of 588 banks in various states during the decade ended 1949 underlined the need for regulating and controlling commercial banks. The Banking Companies (Inspection Ordinance) was passed in January 1946 and the Banking Companies (Restriction of Branches) Act in February 1946. The Banking Companies Act was passed in February 1949 which was subsequently amended to read as Banking Regulation Act.

With a view to bring commercial banks into the mainstream of economic development with definite social obligations and objectives, Government issued an ordinance on 19 July 1969 acquiring the ownership and control of 14 major banks in the country, with deposits exceeding Rs 50 crore each. Six more commercial banks were nationalised with effect from 15 April 1980.

The objectives of the public sector banking system were outlined by the Prime Minister in Parliament on 21 July 1969. Some of the objectives are :

(a) mobilisation of savings of the people to the largest possible extent and to utilise them for productive purposes;
(b) operations of the banking system should be informed by a larger social purpose and should be subject to close public regulation;
(c) legitimate credit needs of private sector industry and trade, big or small, should be met;
(d) to ensure that the needs of productive sectors of the economy and in particular those of farmers, small scale industrialists and self-employed professional groups are met in an increasing manner;
(e) nationalised banks to actively foster the growth of the new and progressive entrepreneurs and create fresh opportunities for hitherto neglected and backward areas in different parts of the country; and
(f) use of bank credit for speculative and other unproductive purposes be curbed.

Composition

The commercial banking system in India consisted of 231 scheduled commercial banks[1] and 4 non-scheduled commercial banks at the end of December 1983. Of the scheduled commercial banks, 178 were in public sector and these account for more than 90 per cent of the commercial banking system. Within the public sector banking system, 150 banks were regional rural banks, specially set up to increase the flow of credit to smaller borrowers in the rural areas. These banks have limited areas of operation—usually specified number of districts. Their lending operations are directed towards specified weaker sections of the community. They offer limited banking services to their customers. The remaining 28 banks in the public sector were regular commercial banks and transact all types of commercial banking business.

Some important indicators with regard to progress of commercial banking in India during the recent past is shown in table 12.8.

Amongst the public sector banks as at the end of December 1983, the State Bank of India was the biggest unit with over 6,400 branches and deposits of over Rs 13,500 crore and advances of nearly Rs 10,000 crore. Apart from the main State Bank, there were 7 other banks called associate banks of State Bank of India. In these banks the State Bank of India owns either the entire or the majority of the share capital. The State Bank and its associate banks as a group account for over 30 per cent of the aggregate banking business in the country and roughly 34 per cent of the business conducted by the public sector banks. The other 20 banks in the public sector are nationalised banks; 14 came in the public sector on 19 July 1969 and 6 on 15 April 1980.

Branch Expansion

There has been a rapid growth of the banking system since 1969. As against 8,262 branches at the end of June 1969 the total number of commercial bank branches at the end of December 1983 was 44,125. The net increase in the number of functioning offices between June 1969 and December 1983 was 35,863. Consequently, the banking coverage in the country as a whole has improved from one office for 65,000 persons in June 1969, to one office for 15,000 persons by the end of December 1983.

Coverage of Rural Areas

In the post nationalisation period, the thrust of the branch expansion policy has been on improving availability of banking facilities in rural areas. Of the addition to the branch network during June 1969 and December 1983, nearly 63 per cent were at rural centres having population of less than 10,000 persons. The number of branches located in rural areas which was 1,832 as at the end of June 1969, rose to 24,395 in December 1983 accounting for 55.3 per cent of the total branches network.

The current policy seeks to further improve the banking coverage in the rural and semi-urban areas with the objective of achieving a coverage of one bank office on an average for population of 17,000 (based on 1981 census) in rural and semi-urban areas by the end of March 1985. Greater attention will be paid on spatial distribution of the branch expansion with bulk of the programme being devoted to opening of branches at unbanked centres in under-banked areas

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[1] According to a notification under Reserve Bank's Act, banks which have not less than Rs 5 lakh as capital and reserve can alone be Scheduled by the Reserve Bank.

PROGRESS OF COMMERCIAL BANKING IN INDIA

Item	June 1969	June 1976	June 1977	June 1978	June 1979	June 1980	June 1981	June 1982	June 1983
Number of Commercial Banks	89	100	126	128	136	153	187	206	226
(i) Scheduled Commercial Banks	73	92	119	122	131	148	183	202	222
(ii) Regional Rural Banks	—	19	48	48	56	73	102	121	142
(iii) Non-Scheduled Commercial Banks	16	8	7	6	5	5	4	4	4
Number of Offices in India	8,262	21,220	24,802	28,016	30,202	32,419	35,707	39,177	42,027
Population per Office[1] (in thousands)	65	29	25	23	21	20	19	17	16
Aggregate deposits of Scheduled Commercial Banks (Rs crore)	4,646	15,178	18,903	23,313	28,671	33,377	40,549	46,128	53,386
Aggregate credit of Scheduled Commercial Banks (Rs crore)	3,599	11,476	13,491	15,694	19,116	22,068	26,551	30,180	35,881
Per capita deposits of Scheduled Commercial Banks (Rs)[1]	88	249	305	369	447	512	556	673	785
Per capita credit of Scheduled Commercial Banks (Rs)[1]	68	188	217	249	298	339	371	440	528
Deposits as percentage of National Income (at current prices)[2]	15·5	23·3	27·1	31·9	33·7	35·2	35·7	36·1	38·3

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1. Based on mid-year population figures estimated by the Registrar General of India upto June 1980. For June 1981, 1982 and 1983 based on 1981 census.

2. Relates to end-March, National Income data relate to revised series.

in community development blocks so as to improve intra-distric imbalances.

Regional Rural Banks

Since 1975, a new category of banking institutions has been brough into existence in the form of regional rural banks to have increase local involvement of the banks for meeting the credit requirement of weaker sections. These banks have limited areas of operation, thei staff are drawn from the areas of operation or the state of thei location and they are enjoined upon to lend only to weaker sections of the society. They have access to liberal refinance facilities from the National Bank for Agriculture and Rural Development (NABARD and each of the banks sponsoring such regional rural banks. As at the end of December 1983, 150 such banks were working in the country. These regional rural banks had opened 7,795 branches mobilised deposits to the tune of Rs 678 crore and had outstanding advances amounting to nearly Rs 751 crore.

District Planning and Coordination

For facilitating co-ordinated effort on the part of the banks to increase their involvement in well planned effort to promote credit based development of districts' economies and to ensure adequate support to beneficiary oriented development programmes, Lead Bank Scheme was introduced towards the close of 1969. In implementing the scheme the bank designated as the *Lead Bank* for each district is expected to undertake district credit planning, involve other banks in the formulation of specific programme contents, allocate shares among various credit institutions operating in the district, and bring about a co-ordinated effort on the part of all such institutions to deploy credit in support of identified programmes.

To secure co-ordination between the activities of different banks on the one hand and all the banks and district level agencies on the other, the district consultative committees presided over by the District Collector meet at regular intervals and sort out problems of implementation. District-level review meetings are held where implementation of annual action plans is reviewed. Forums also exist for looking into implementation of anti-poverty schemes at the block-levels.

Deposit Mobilisation

There has been a significant increase in the deposits of scheduled commercial banks in the post-nationalisation period. At the end of June 1969, the deposits of these banks aggregated to Rs 4,646 crore —about 15.5 per cent of the national income at the current prices. By end June 1982, they had increased to Rs 46,128 crore i.e. 36.1 per cent at the national income. The deposits of the scheduled commercial banks increased to Rs 53,386 crore by the end of June 1983. Of these, the deposits with banks in the public sector were Rs 3,871 crore in 1969 and Rs 48,340 crore at the end of June 1983.

The deposits mobilised by the banks are utilised for two purposes. firstly, for investments in government securities and other approved securities in fulfilment of liquidity stipulations; and, secondly, as loans and advances to borrowers.

Commercial banks have been investing part of their deposits in government securities and bonds and debentures of government associated bodies, in pursuance of the liquidity requirements stipulated by the Reserve Bank. With the growth of their deposits as also owing to successive upward revisions of the statutory liquidity ratio, there has been significant rise in the investments of the banks in government and other approved securities from Rs 1,727 crore in March 1970 to Rs 18,334 crore in March 1983. The investment of funds by scheduled commercial banks in such securities now constitutes an important constituent of the scheme of resources mobilisation for financing plan programmes.

edit
evelopment

Advances—in whatever form—constitute the end objective of banks operation. From a low level of Rs 3,599 crore in June 1969 advances of scheduled commercial banks increased to Rs 35,881 crore by June 1983. Advances of banks in the public sector increased from Rs 3,017 crore to Rs 32,278 crore over the same dates.

ctor
eployment

More significant than the increase in the volume of bank credit are the changes in the sectoral deployment. In the pre-nationalisation days, large and medium industry and wholesale trade accounted for over 78 per cent of the bank credit. By November 1983, the share of these sectors (excluding credit for public food procurement) had declined to about 43 per cent. Correspondingly, the share of priority sectors, food procurement agencies, etc., had shown significant enlargement.

lvances to
iority Sector

Extension of credit to small borrowers in the hitherto neglected sectors of the economy has been one of the major tasks assigned to the public sector banks in the post-nationalisation period. To achieve this objective, the banks have drawn up schemes to extend credit to small borrowers in sectors like agriculture, small scale industry, road and water transport, retail trade and small business which traditionally had very little share in the credit extended by the banks. Taking into account the need to provide resources requirements of the weaker sections for specific needs, consumption credit (with certain limits for specific needs) has been incorporated in the priority sectors. Similarly small housing loans (not exceeding Rs 5,000) to scheduled castes/tribes and other weaker sections are also clasified as priority sector advances.

The number of borrowal accounts with the public sector banks for these categories of borrowers increased from 2.60 lakh to 165.01 lakh between June 1969 and December 1982. The amount outstanding during the same period increased from Rs 441 crore to Rs 11,621 crore. The share of these sectors in the total credit at the end of December 1982 was 37.2 per cent against 14.6 per cent in June 1969.

Table 12.9 shows the achievements of public sector banks in stepping up the flow of credit to various priority sectors.

nt Policy

During the recent past, policy measures have been to ensure that the public sector banks not only enlarge the total volume of credit going to the priority sectors but also the proportion of it going to really smaller and poorer borrowers belonging to the weaker sections of the community. Thus, banks have not only been asked to step up their advances to priority sectors so as to take their share in aggregate credit to the level of 40 per cent by March 1985, they have been asked to ensure that not less than 25 per cent of such priority sector advances go to the weaker section beneficiaries of the Revised 20-Point Programme. A broader concept of weaker section has been evolved for this purpose. For agriculture and allied activities, the stipulated proportion is 15 per cent of total credit by March 1985 and 16 per cent by March 1987.

TABLE 12.9
Credit Flow to Priority Sectors of Public Sector Banks

Sector	No. of Borrowal Accounts (in lakh)			Amount Outstanding (Rs in crore)		
	June 1969	December 1979	December 1982	June 1969	December 1979	December 1982
1. Agriculture						
(a) Direct Finance	1·60	68·56	101·99	40·21	2,015·17	3,954·23
(b) Indirect Finance	0·04	10·48	13·37	122·12	567·78	1,150·89
2. Small Scale Industry[1] .	0·51	6·55	10·23	251·07	2,334·50	4,207·91
3. Road and Water Transport Operators	0·02	2·38	3·87	5·49	448·83	1,141·63
4. Retail Trade and Small Business .	0·33	14·40	21·48	19·37	476·49	848·44
5. Professional and Self-Employed .	0·08	7·04	10·19	1·91	134·04	252·17
6. Education .	0·01	0·37	0·48	0·80	8·75	15·66
Total .	2·60	109·78	161·61	440·97	5,985·56	11,570·93
7. Housing .	—	—	1·40	—	—	34·46
8. Consumption	—	—	2·01	—	—	15·70
Grand Total	2·60	109·78	165·01	440·97	5,985·56	11,621·09

Data are provisional and relate to State Bank of India group plus 20 nationalised banks.

1. Number of Units.

Credit to Weaker Sections

Banks have been asked to make special effort to assist weaker sections with adequate credit to enable them to undertake self-employment ventures or acquire income generating capital assets so as to improve their standard of living. As at the end of December 1982, public sector banks had assisted scheduled castes|scheduled tribes borrowers through 32 lakh accounts to the tune of Rs 609 crore.

Another measure of the thrust of the banks lending efforts towards weaker sections is their involvement in and support to the integrated rural development programme which is directed towards those below the poverty line. The programme envisages capital subsidy and credit assistance to identified poor families for acquiring income generating assets to come up above the poverty line. Total term credit mobilised by the commercial and co-operative banking systems has been increasing year after year—Rs 289 crore in 1980-81, Rs 468 crore in 1981-82 and Rs 714 crore in 1982-83. The programme envisages a capital subsidy flow of Rs 1,500 crore during the Sixth Plan period with matching credit mobilisation of Rs 3,000 crore to benefit 1.5 crore families.

nterest Rate Structure

The lending rate structure of the scheduled commercial banks is weighted in favour of priority sector advances and within that category in favour of smaller/poorer borrowers.

Public sector banks are operating a scheme of differential rate of interest (DRI) under which poor borrowers having an annual family income of not more than Rs 2,000 in rural areas and Rs 3,000 in other areas and not owning more than one hectare of unirrigated or 0.4 hectare of irrigated land are given credit support at 4 per cent per annum rate of interest for sums upto Rs 5,000 as term loan and Rs 1,500 as working capital loan, for productive ventures.

Public sector banks had outstanding DRI credit of Rs 312 crore against 33 lakh borrowal accounts as at the end of December 1982.

Housing loans upto Rs 5,000 to scheduled caste/scheduled tribe borrowers are extended at 4 per cent per annum rate of interest.

Export Finance

In keeping with the priority accorded to export, commercial banks provide credit to this sector at concessional terms and conditions. The quantum of outstanding export credit granted by scheduled commercial banks stood at Rs 1,827 crore as on last Friday of March 1983.

To encourage the banks to provide credit support to export effort, Reserve Bank provides liberal refinance on incremental export credit. Currently the rate of refinance is 125 per cent of the increase in export credit over the average level of export credit outstandings during 1982.

Reserve Bank also operates a Duty-Drawback Scheme under which exports can get interest free loans from banks upto 90 days against shipping bills provisionally certified by the customs authorities towards refund of duty. The banks in turn are eligible to avail of interest free refinance from the Reserve Bank pending final settlement of Duty-Drawback claims of the exporters.

Co-ordination among Banks and Administrative Agencies

With the increasing role being assigned to the banks to lend active credit support to the programmes of economic development of backward classes and weaker sections, co-ordination among the banks, and between the banks and developmental agencies has become important. To achieve this, different forums have been created at district, state and regional levels. At the district level, there are consultative committees with Collectors as their Chairman and the Lead Banks' officers as their conveners. At the state level, there are two forums, viz., state level bankers' committees and state level co-ordination committees. The former comprise bank officers at middle-management level, while the latter also include heads of departments of the state governments. At the apex level are six regional consultative committees having representations at ministers' level.

Branches of Indian Banks Abroad

One hundred and thirty-nine branches (including 7 offshore and 5 mobile agencies) of 13 Indian commercial banks were operating in foreign countries as on 30 November 1983, the largest concentration being in the UK, USA, Fiji, Kenya, United Arab Emirates, Hong Kong, Mauritius and Singapore. These banks mainly cater to the demands of trade and commerce between India and these countries as also meet the banking needs of the sizeable population of Indian origin there.

DEVELOPMENT FINANCIAL INSTITUTIONS

Industrial Development Bank of India

The Industrial Development Bank of India (IDBI) was set up on 1 July 1964 as a wholly owned subsidiary of the Reserve Bank of India to co-ordinate the activities of other financial institutions (including banks) to supplement their resources, to plan and promote industries of key significance to the industrial structure, and to adopt and enforce a system of priorities in promoting future industrial growth. The IDBI was made an autonomous corporation wholly owned by the Government on 16 February 1976.

As the apex institution for term finance, the IDBI's objectives and functions include planning, promoting and developing industries to fill up vital gaps in the industrial structure in the country, co-ordinating the working of institutions engaged in financing, promoting or developing industries and assisting in the development of these institutions providing technical and administrative assistance for promotion and expansion of industry, and undertaking market and investment research and surveys and also techno-economic studies in connection with the development of industry.

Under the IDBI Charter, it can finance all types of industries irrespective of the form of organisation or size of the unit, and there are no restrictions on the nature and type of security and quantum of assistance.

The IDBI acts as lender of last resort to finance, in conformity with national priorities, all worthwhile projects, preferably those located in the less developed areas and sponsored by new and professional entrepreneurs and those which are employment-oriented, export-oriented and import-substitutive. The IDBI's assistance is extended through various schemes of assistance : project finance scheme (rupee and foreign currency loans, underwriting and direct subscription and guarantees), soft loan scheme for modernisation, technical development fund scheme, refinance scheme for industrial loans to small and medium industries, refinance scheme for modernisation of small and medium industries, refinance scheme for rehabilitation of small industries, bills rediscounting scheme, seed capital scheme, scheme of investment in shares and bonds of other financial institutions, scheme of concessional assistance for development of no-industry districts and other backward areas, and scheme for manufacture and installation of renewable energy systems.

The authorised capital of IDBI was Rs 400 crore and paid-up capital Rs 255 crore as on 31 December 1983.

The IDBI's Head Office is in Bombay; it has five regional offices at Ahmadabad, Calcutta, Madras, New Delhi and Guwahati and 11 branch offices at Bangalore, Bhopal, Bhubaneswar, Chandigarh, Cochin, Hydrabad, Jaipur, Jammu, Kanpur, Patna and Shimla.

Industrial Finance Corporation

The Industrial Finance Corporation of India (IFCI) is the first development bank established in the country under an Act of Parliament on 1 July 1948, with the object of providing medium and long-term credits to eligible industrial concerns in India. The IFCI provides direct financial assistance for the setting up of new industrial projects and expansion, diversification, renovation or modernisation of existing ones in the form of rupee and foreign currency loans to all eligible medium and large-sized industrial projects set up or proposed to be set up in the country in the corporate and/or co-operative sector. In the promotional role, the thrust of IFCI's activities is on the development and growth of industries in the rural, tiny, small-scale and ancillary sectors. The IFCI has also been helping the development of entrepreneurship in the rural, tribal and small-scale sectors through its specially devised promotional schemes and agencies like the Technical Consultancy Organisation (TCO) set up for the purpose.

Industrial Credit and Investment Corporation

The Industrial Credit and Investment Corporation of India (ICICI) was set up in 1955. Since its inception and up to 31 December 1983 financial assistance of Rs 2,658.51 crore was sanctioned and Rs 1,924.24 crore was disbursed by the Corporation.

Industrial Reconstruction Corporation

The Industrial Reconstruction Corporation of India (IRCI), set up in 1971, is concerned with the revival and rehabilitation of industrial units which have closed down or are facing closure but show promise of viability by reconstruction of share capital, strengthening of management, provision of finance on soft terms, improvement in technology and in labour relations. Up to 30 June 1983, IRCI had sanctioned financial assistance of Rs 224.43 crore to 209 units.

State Financial Corporations

Eighteen state financial corporations provide industrial finance to medium and small-scale sectors. The number of units assisted during 1982-83 was 33,811 registering a growth of 5.5 per cent over 1981-82 figures. The share of the small-scale sector in total assistance from the corporations has been increasing consistently over the last four years.

Export-Import Bank

The Export-Import Bank of India (Exim Bank), established in January 1982, commenced operations from March 1982. The Bank operates various lending programmes for promotion of exports of engineering and capital goods and related services from India. Funded financial assistance on competitive credit terms is extended to enable Indian exporters to operate in international markets. Programmes of funded assistance consist of direct financial assistance to exporters, overseas investment financing, financing for exports of technology and consultancy services, pre-shipment credit, overseas buyers's credit, lines of credit, refinance of export credit, export bills rediscounting and relending facility to banks abroad.

Non-funded assistance in the form of guarantees is also extended by Exim Bank. The Exim Bank participates with commercial banks in India in the issuance of guarantees in foreign currencies, on behalf of Indian exporters/contractors in favour of overseas importers/employers and banks. These guarantees are in the nature of bid bonds, advance payment and performance guarantees, retention money guarantees, and guarantees for raising finance abroad. The Exim Bank also introduced in 1983 a new facility to attract greater participation in export credit from commercial banks in India which are authorised dealers in foreign exchange. Under the Exim syndication facility, the Bank will provide funds for an export proposal and syndicate the credit risks to a commercial bank or banks.

National Bank for Agriculture and Rural Development

To foster the credit based programmes of agricultural development, particularly those requiring term credit, Agricultural Refinance Development Corporation (ARDC) was providing refinance support to the banks. With the widening of the role of bank credit from *agricultural development* to *rural development,* need was felt for a more broad-based organisation to extend support and give guidance to credit institutions in matters connected with formulation and implementation of rural development programmes. A National Bank for Agriculutre and Rural Development (NABARD) was, therefore, set up. Taking of the entire undertaking of ARDC, NABARD started functioning from 12 July 1982. It is a single integrated agency with respect to all matters relating to policy, planning and operational aspects in the flow of credit for the promotion of agriculture, small-scale industries, cottage and village industries, handicrafts and other rural crafts and other allied economic activities in rural areas.

The NABARD gives to commercial banks, regional rural banks, state land development banks and state co-operative banks the same refinance facilities which were formerly being given by ARDC. It also gives to RRBs and state co-operative banks the refinance assistance which was being given before by the Reserve Bank.

Term credit disbursements of NABARD by way of refinance under schematic lendings reached a new peak of Rs 703 crore during 1982-83 (July–June), as against Rs 600 crore disbursed in the previous year by the erstwhile ARDC. The refinance commitments under new schemes approved during the year amounted to Rs 1,019 crore.

Reserve Bank

The Reserve Bank of India was established under the Reserve Bank of India Act, 1934 on 1 April 1935 and nationalised on 1 January 1949. The main objectives are, regulating issue of bank notes, keeping the foreign exchange reserves of the country, operating the currency and credit system of the country with a view to securing monetary stability in India and developing the financial structure of the country on sound lines consistent with the national social-economic objectives and policies.

The Bank is the sole authority for the issue of currency in India other than one-rupee coins and subsidiary coins and notes. As the agent of the Central Government, the Reserve Bank undertakes the distribution of one-rupee notes and coins, as well as small coins issued by the Government. The Bank acts as banker to the Central Government, state governments, commercial banks, state co-operative banks and to some of the financial institutions. It formulates and administers monetary policy with a view to promoting stability of prices while encouraging higher production through appropriate deployment of credit. The Reserve Bank plays an important role in the maintenance of the exchange value of the rupee, and acts as an agent of the Government in respect of India's membership of the International Monetary Fund. The Bank also performs a variety of developmental and promotional functions.

Most of the policy decisions are normally taken in the Central Office. There are 15 full-fledged offices of the Bank headed by managers, and at 7 centres, there are regional offices of one or more departments.

General superintendence and direction of the affairs of the Bank, vest with the Central Board of Directors. The Board consists of 14 Directors, besides the Governor and four Deputy Governors. Governor is the Chairman of the Central Board and Chief executive authority of the Bank. Regular current business of the Bank is attended to by the Committee of the Central Board which meets once a week. There are local boards at Bombay, Calcutta, Madras and New Delhi to advise the Central Board on matters referred to them. The Governor as Chairman of the Central Board of Directors is responsible for internal administration. He is assisted by Deputy Governors and Executive Directors under whose guidance the various departments of the Bank work.

CORPORATE SECTOR

The number of joint stock companies both Government and non-Government, incorporated under the Companies Act, 1956 and at work in India as on 31 March 1983 was 84,691. Of these, 82,903 companies were limited by shares, 352 were companies with unlimited liability and 1,536 were limited by guarantee and were associations not for profit. 82,903 companies limited by shares had a paid-up capital of Rs 19,909 crore comprising 11,780 public limited and 71,123 private limited companies with a paid-up capital of Rs 5,339 crore and Rs 14,570 crore respectively.

Table 12.10 shows the number and paid-up capital of companies (Government and non-Government taken together) functioning in 1951, 1961, 1971 and 1981 onwards.

TABLE 12.10
COMPANIES AT WORK

As on 31 March	Companies limited by shares						Companies with unlimited liability (Number)	Companies limited by guarantee and association not for profit (Number)
	Public		Private		Total			
	Number	Paid-up Capital (Rs crore)	Number	Paid-up Capital (Rs crore)	Number	Paid-up Capital (Rs crore)		
1951 .	12,568	566·5	15,964	208·9	28,532	775·4	—	1,213
1961 .	6,702	948·2	19,447	870·3	26,149	1,818·5	—	1,169
1971 .	6,690	2,091·5	23,632	2,422·2	30,322	4,513·7	—	1,220
1981 .	9,740	4,645·5	52,974	10,909·0	62,714	15,554·5	176	1,478
1982 .	10,541	4,982·1	61,861	12,858·1	72,402	17,840·1	219	1,496
1983 .	11,780	5,339·1	71,123	14,569·8	82,903	19,908·9	252	1,536

The companies registered during 1982-83 were 10,840. Of these 10,784 were companies limited by shares, 33 were companies with unlimited liability and 43 were companies limited by guarantee being associations not for profit. Of the companies limited by shares 1,278 were public limited and 9,486 were private limited having an authorised capital of Rs 527.5 crore and Rs 858.7 crore respectively.

Capital Issues and Project Costs

During 1982-83, 353 non-Government non-financial public limited companies raised an amount of Rs 356.60 crore in the capital market though the issue of prospectuses. Of the total amount of Rs 356.60 crore Rs 171.75 crore consisted of equity shares, Rs 1.75 crore preference shares and the balance Rs 183.10 crore were debentures accounting respectively for 48.2 per cent, 0.5 per cent and 51.3 per cent of the total amount issued. Of the total amount of Rs 356.60

crore issued, as much as Rs 205.4 crore forming 57.6 per cent w offered to the public and the balance *i.e.* Rs 151.22 crore constituti 42.4 per cent was earmarked for firm allotment to promoters, directo and their friends, existing shareholders and employees of t companies.

The comparative position in 1981-82 was that 244 non-Gover ment non-financial public limited companies raised an amount of 421.63 crore in the capital market through the issue of prospectus Of the total amount issued during this year, Rs 193.22 crore consist of equity shares, Rs 2.43 crore of preference shares and Rs 225. crore as debentures accounting respectively for 45.8 per cent, 0.6 p cent and 53.6 per cent of the total amount issued. The total proj cost of these companies issuing capital during 1982-83 was estimat to be Rs 837.14 crore as compared to Rs 1,457.19 crore in the precee ing year.

Companies ceased to work

The number of companies which went into liquidation or otherwi became defunct or ceased to work and were struck off under Secti 560(5) of the Companies Act, 1956 during 1982-83 was 261. Co -parative figures for some of the earlier years were : 1970-71 (472 1971-72 (373), 1980-81 (391) and 1981-82 (330).

Government Companies

Table 12.11 gives the number and paid-up capital of Governme companies at work for selected years.

TABLE 12.11
GOVERNMENT COMPANIES AT WORK

As on 31 March	Public		Private		Total	
	Number	Paid-up Capital (Rs crore)	Number	Paid-up Capital (Rs crore)	Number	Paid-u Capital (Rs cro
1957 . .	39	18·9	35	53·7	74	72·6
1962 . .	41	23·5	113	606·2	154	629·7
1967 . .	65	77·1	167	1,314·4	232	1,391·5
1972 . .	107	156·0	245	2,213·1	352	2,369·1
1977 . .	273	591·9	428	6,582·6	701	7,174·5
1982 . .	372	1,266·1	522	11,613·0	394	12,879·2
1983 . .	409	1,499·8	534	13,222·7	943	14,722·5

Foreign Companies

On 31 March 1983 there were 320 foreign companies in India defined under Section 591 of the Companies Act, 1956 (*i.e.* jo stock companies incorporated abroad but having a place of busin in India). The distribution of these companies according to t country of origin, as on 31 March 1983 was UK 128, USA 67; Jap 20; France 10; West Germany, Canada and Italy 7 each; Pakist Switzerland, Hongkong, Sweden, Netherlands and Bangladesh 5 ea Australia 4; Belgium, Yugoslavia, Thailand, Uganda and Nepal 3 ea Bahamas, Lebanon, Singapore, Greece, United Arab Emirates 2 ea Panama, Norway, South Korea, Ethiopia, Sri Lanka, Kuwait, Libe Luxembourg, Tanzania, Iran, Aden, Malaysia, Austria, Denmark Mauritius 1 each.

INSURANCE

Insurance industry in India has a long history going back for ove hundred years. The growth of the industry was particularly ma ed after the First World War and when, in 1947, India attai

Independence, there were well over 300 Indian and non-Indian insurers and provident societies in the field.

Independence marked the beginning of a new era of growth of insurance business in India but the main watersheds were the nationalisation of life insurance business on 1 September 1956, and the nationalisation of general insurance business on 1 January 1973. The major objective of nationalisation was achievement of wider spread of business, more particularly in the rural areas, so that the benefits of insurance should become available to an increasing number of persons and to all sectors of the economy. For this purpose, increasing emphasis has been laid on strengthening the field organisations and introduction of new insurance schemes to meet the special needs of different sections of the community. A conscious policy for establishment of branch offices in the rural and mofussil areas has also been adopted.

LIFE INSURANCE CORPORATION

The Life Insurance Corporation of India (LIC) was established on 1 September 1956 to spread the message of life insurance in the country and to mobilise people's savings for nation building activities.

Prior to nationalisation, 245 private insurers used to operate from 97 centres catering mostly to urban population and their total business in force stood at Rs 1,220 crore by the end of 1955. After nationalisation, the LIC with its central office in Bombay and five zonal offices at Bombay, Calcutta, Delhi, Madras and Kanpur operates through 43 divisional offices in important cities and over 1,000 branch offices spread throughout the country. The total business in force of LIC as on 31 March 1983 amounted to Rs 35,374 crore of which individual assurances accounted for Rs 26,402 crore under 244.42 lakh policies and the group insurance for Rs 8,972 crore covering 74,95,494 lives. The Corporation transacts business in foreign countries and has offices in Fiji, Mauritius and the United Kingdom.

During 1947, the new business of all insurers amounted to Rs 126 crore which had doubled by the end of 1955. The tremendous progress made by LIC is reflected in the fact that during 1982-83, it wrote an individual assurance business of Rs 3,995 crore under 22.31 lakh policies and the group insurance business of Rs 7,559 crore on 7.59 lakh lives. The new business written in rural areas amounted to Rs 1,037.98 crore under 7.33 lakh policies during the same period. The rural career agents scheme and *Jana raksha* policy specially designed for rural masses are making a steady progress in spreading the concept of life insurance in rural areas. The group insurance schemes enable the Corporation to provide life insurance cover at nominal cost to the socially and economically weaker sections of the society.

In the early 70s, LIC embarked upon a large scale scheme of public housing and built large townships at Borivli, Bombay; Indira Nagar, Bangalore; Hyderabad; Kanpur; and one at Vastrapur, Ahmadabad is underway.

GENERAL NSURANCE

Government took over the management of general insurance business in May 1971 and followed it up with the final take over of that business with the passing of the General Insurance Business (Nationalisation) Act, which came into force from 1 January 1973. The Act is aimed at ensuring that the general insurance business is developed to the best advantage of the community.

At the time of nationalisation, the business was transacted by 107 general insurance companies, Indian as well as foreign, which have been re-grouped into four subsidiaries of the General Insurance Corporation of India. The subsidiaries are : (1) National Insurance Company Limited, Calcutta; (2)New India Assurance Company Limited, Bombay; (3) Oriental Fire & General Insurance Company Limited, New Delhi[1]; and (4) United India Insurance Company Limited, Madras. General Insurance Corporation of India does not transact any direct insurance business except aviation insurance pertaining to the Indian Airlines, Air India and Hindustan Aeronautics.

The four subsidiary companies of GIC operate on an all-India basis in competition with one another, through regional, divisional and branch offices. The organisational network of the companies has witnessed significant growth since 1975. As compared to 799 offices in 1975, at the end of 1983, the network consisted of 1,684 offices. The services of the general insurance industry are now available all over the country, as practically all districts have either an office or an inspector.

Between 1973 and 1983 the composition of the business underwent a change in favour of the miscellaneous class, particularly in the non-traditional areas such as cattle insurance and agricultural pumpsets insurance. The industry faced the challenge of having to underwrite large risks in the new technological areas of off-shore oil drilling and satellite communication. The *janata* personal accident policy and the *gramin* accident policy provide individual as well as group covers to the people of the rural areas at very nominal rates of premium.

Under the 'no fault liability' in motor insurance, the general insurance industry provides succour to the victims of motor accidents in case where the fault or negligence on the part of the owner/driver of the motor vehicle involved in the accident is not established, without charging any extra premium under the motor insurance policy Similarly, through the creation of a Solatium Fund, victims of hit and run road accidents, who otherwise may not be eligible for any compensation, have become entitled for relief.

Following government guidelines, a major portion of the investible funds of the industry is channelised into the socially oriented sectors of the economy. The investment in Central and state government securities has been steadily rising over the years. The industry has been advancing loans for housing.

The general insurance industry operates through branches and agencies in 29 countries spread over South East Asia, West Asia, Africa, Europe, North America and the Carribean. The industry has also joint venture companies operating in Malaysia, Kenya and associate companies in Ghana, Nigeria, Sierra Leone, Trinidad and Tobago.

Apart from the all-India training/educational institutions such as the National Insurance Academy, the College of Insurance and the Federation of Insurance Institute, each Subsidiary Company has its own in-house training centres. A new dimension has been added to insurance education in the country with the inclusion of insurance as an elective subject at the 10+2 level of the Central Board of Secondary Education.

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[1] The name of the company was changed from 1 May 1984 to The Oriental Insurance Company Limited.

INVESTMENT INSTITUTIONS

Unit Trust of India

The Unit Trust of India (UTI) was established in 1964 as a public sector investment institution for mobilising the savings of the community and channelling them into productive corporate investments so as to provide for the growth and diversification of the economy. To achieve this, the UTI sells units in the denomination of Rs 10 or Rs 100 to the investing public to provide an opportunity, particularly to those belonging to small and medium income groups, indirectly to participate in the ownership of shares and debentures of joint-stock companies. It has formulated various schemes from time to time to cater to the specific investment needs of different types of investors. The UTI has seven different schemes : (a) Unit Scheme, 1964; (b) Unit Linked Insurance Plan, 1971; (c) Unit Scheme for Charitable and Religious Trusts and Registered Societies (CRTS), 1981; (d) Income Unit Scheme (IUS), 1982; (e) Monthly Income Unit Scheme (MIS), 1983; (f) Growth and Income Unit Scheme (GIS), 1983 and (g) Capital Gains Unit Scheme (CGS), 1983.

The aggregate sales of units under all the schemes rose to an all-time high of Rs 167 crore during 1982-83 (July-June), from Rs 157 crore in the previous year.

The UTI has been stepping up the rate of dividend progressively ever since its inception. For the Unit Scheme 1964, which is the principal scheme of the Trust, the rate of dividend has been increased continuously from 6.1 per cent for 1964-65 to 12.5 per cent for 1981-82, 13.5 per cent for 1982-83 and 14 per cent for 1983-84.

Stock Exchanges

Stock Exchanges play a crucial role in mobilisation of resources for the private corporate sector.

There are 12 Stock Exchanges in the country today recognised under the Securities Contracts (Regulation) Act, 1956 located at Bombay, Calcutta, Madras, Delhi, Ahmadabad, Ludhiana, Kanpur, Indore, Pune, Hyderabad, Bangalore and Cochin. While Stock Exchanges are being administered by their governing boards and the Executive Chiefs, policies relating to their regulation and control are laid down by Finance Ministry. Reserve Bank index number of prices for ordinary industrial shares (1970-71=100), which stood at 181.1 on 5 February 1983 rose by 14.4 per cent to 207.2 on 4 February 1984.

EXTERNAL AID

India has been receiving external aid in the form of loans, grants and commodity assistance from friendly foreign countries and international institutions/organisations since the first five year plan. The aids were extended for the developmental activities in the field of agriculture, irrigation, command area development, rural and urban drinking water supply, population control, nutrition programme, power, fertilizer, oil and gas, railways and tele-communication and import of spare parts, etc.

At the end of March 1983 the total external aid authorisations amounted to Rs 34,391 crore which consists of loans Rs 27,802 crore, grants Rs 3,815 crore and commodity assistance Rs 2,774 crore. Against the said authorisations the total assistance utilised amounted to Rs 26,834 crore consisting of loans Rs 20,755 crore, grants Rs 3,260 crore and commodity assistance Rs 2,819 crore.

In 1983-84, the total gross inflow of foreign assistance was Rs 2,267 crore and the net inflow after the deduction of Rs 615 crore towards repayment of principals amounting to Rs 1,652 crore. As against Rs 2,267 crore during 1983-84 the gross inflow of external aid is placed at Rs 2,661 crore (loans Rs 2,329 crore+grants Rs 332 crore) in 1984-85. The repayments during 1984-85 is estimated to be Rs 652 crore as against Rs 615 crore in 1983-84. The total inflow of net foreign aid is thus, expected to be around Rs 2,009 crore during 1984-85.

13 PLANNING

Planning in India derives its objectives and social premises from the Directive Principles of State Policy set forth in the Constitution. The public and private sectors of the economy are viewed as complementary. The private sector covers not only organised industry but also small-scale industries, agriculture, trade and a great deal of activity in housing and construction and other fields. Individual effort and private initiative are considered both necessary and desirable, the policy being to assist development on the basis of voluntary co-operation to the utmost extent. Economic planning also envisages a growing public sector with massive investments in basic and heavy industries.

The Government appointed a Planning Commission in 1950 to prepare a blueprint of development, taking an overall view of the needs and resources of the country. The composition of the Commission as on 1 November 1984 was as follows :—

Rajiv Gandhi : Prime Minister and Chairman
P. V. Narasimha Rao : Minister of Home Affairs and Planning and Deputy Chairman
Pranab Kumar Mukherjee : Minister for Finance, Commerce and Supply and Member
S. B. Chavan : Minister for Defence and Member
Mohammad Fazal : Member
Dr. C. H. Hanumantha Rao : Member
Prof. M. G. K. Menon : Member
Dr. A. M. Khusro : Member
K. V. Ramanathan : Secretary

First Plan

The First Five Year Plan (1951-52 to 1955-56) had a two-fold objective to correct the disequilibrium in the economy caused by the Second World War and partition of the country and to initiate simultaneously a process of all-round balanced development, which would ensure a rising national income and a steady improvement in the living standards over a period of time. Since the country had to import foodgrains on a large scale in 1951 and there were inflationary pressures in the economy, the Plan accorded the highest priority to agriculture, including irrigation and power projects. About 44.6 per cent of the total outlay of Rs 2,069 crore in the public sector (later raised to Rs 2,378 crore) was allotted for its development. The Plan also aimed at increasing the rate of investment from 5 per cent to about 7 per cent of the national income.

Second Plan

In 1954, the Parliament declared that the broad objective of economic policy should be to achieve a 'socialistic pattern of society' under which the basic criteria for determining the lines of advance would be social gain and greater equality in income and wealth and not private profit. The Second Five Year Plan (1956-57 to 1960-61), therefore, sought to promote a pattern of development which would ultimately lead to the establishment of a socialistic pattern of society in India. In particular, it stressed that the benefits of economic development should accrue more to the relatively less privileged sections of society and there should be a progressive reduction in the concentration of incomes, wealth and economic power.

The main aims of the Second Plan were : (i) an increase of 25 per cent in the national income; (ii) rapid industrialisation with particular emphasis on the development of basic and heavy industries; (iii) large expansion of employment opportunities; and (iv) reduction of inequalities in income and wealth and a more even distribution of economic power. The Plan also aimed at increasing the rate of investment from about 7 per cent of the national income to 11 per cent by 1960-61. The Plan laid special stress on industrialisation—increased production of iron and steel, heavy chemicals including nitrogenous fertilizers and development of heavy engineering and machine-building industry.

Third Plan

The Third Five Year Plan (1961-62 to 1965-66) aimed at securing a marked advance towards self-sustaining growth. Its immediate objectives were to : (i) secure an increase in the national income of over 5 per cent per annum, and at the same time ensure a pattern of investment which could sustain this rate of growth during subsequent plan periods; (ii) achieve self-sufficiency in foodgrains and increase agricultural production to meet the requirements of industry and exports; (iii) expand basic industries like steel, chemicals, fuel and power and to establish machine-building capacity, so that the requirements of further industrialisation could be met within a period of ten years or so mainly from the country's own resources; (iv) utilise fully the manpower resources of the country and ensure a substantial expansion in employment opportunities; and (v) establish progressively greater equality of opportunity and bring about reduction in disparities of income and wealth and a more even distribution of economic power. The Plan aimed at increasing the national income by about 30 per cent from Rs 14,500 crore in 1960-61 to about Rs 19,000 crore by 1965-66 (at 1960-61 prices) and per capita income by about 17 per cent from Rs 330 to Rs 385 during the same period.

Annual Plans

The situation created by the Indo-Pakistan conflict in 1965, two successive years of severe drought, devaluation of the currency, general rise in prices and erosion of resources available for Plan purposes delayed finalisation of the Fourth Five Year Plan. Instead, between 1966 and 1969, three Annual Plans were formulated within the framework of the Draft Outline of the Fourth Plan. They took into account the conditions prevailing at that time. The state of the economy and the non-availability of financial resources for Plan purposes kept down the size of development outlay during this period.

Fourth Plan

The Fourth Five Year Plan (1969-70 to 1973-74) aimed at accelerating the tempo of development in conditions of stability and at reducing fluctuations in agricultural production as well as the impact of uncertainties of foreign aid. It aimed at raising the standard of living of the people through programmes which at the same time were designed to promote equality and social justice. The Plan laid particular emphasis on improving the condition of the less privileged and weaker sections of the society especially through the provision of employment and education. Efforts were also directed towards reduction of concentration and a wider diffusion of wealth, income and economic power.

The Plan aimed at increasing the net domestic product at 1968-69 factor cost from Rs 29,071 crore in 1969-70 to Rs 38,306 crore in 1973-74. In terms of 1960-61 prices, this implied an increase from Rs 17,351 crore in 1968-69 to Rs 22,862 crore in 1973-74. The average annual compound rate of growth envisaged was 5.7 per cent.

Fifth Plan

The Fifth Five Year Plan (1974-75 to 1977-78) was formulated at a time when the economy was facing severe inflationary pressures. The major objectives of the Plan were to achieve self-reliance and to adopt measures for raising the consumption standards of the people living below the poverty line. The Plan also gave high priority to bringing inflation under control and to achieve stability in the economic situation. The Plan targeted an annual growth rate of 5.5 per cent in national income. Four Annual Plans pertaining to the Fifth Plan period were completed. It was subsequently decided to end the Fifth Plan with the close of the Annual Plan 1977-78 and to initiate work for a new plan for the next five years with new priorities and programmes.

Sixth Plan

The Sixth Five Year Plan (1980-81 to 1984-85) has been formulated after taking into account the achievements and shortcomings of the past three decades of planning. Removal of poverty is the foremost objective of the Plan even though it is recognised that the task of this magnitude cannot be accomplished in a short period of five years.

The strategy adopted for this Plan consists essentially in moving simultaneously towards strengthening the infrastructure for both agriculture and industry so as to create conditions for an accelerated growth in investments, output and exports and provide through special programmes designed for the purpose, increased opportunities for employment especially in the rural areas and the unorganised sector and meet the minimum basic needs of the people. Stress is laid on dealing with inter-related problems, through a systems approach rather than in separate compartments; on greater management-efficiency and intensive monitoring in all sectors and active involvement of the people in formulating specific schemes of development at the local level and securing their speedy and effective implementation.

The Sixth Plan envisages a total public sector plan outlay of Rs 97,500 crore. It aims at a growth rate of 5.2 per cent per annum in gross domestic product and 3.3 per cent per annum in per capita income.

OUTLAY AND INVESTMENT IN PLANS

The public sector outlay as planned in the First, Second and Third Plans was Rs 2,378 crore, Rs 4,600 crore and Rs 7,500 crore while the actual expenditure was Rs 1,960 crore, Rs 4,672 crore and Rs 8,577 crore, respectively. The investment by the private sector in the First, Second and Third Plans was Rs 1,800 crore, Rs 3,100 crore and Rs 4,190 crore, respectively. The total public sector actual expenditure during the three Annual Plans was Rs 6,625 crore. The Fourth Plan outlay envisaged originally was Rs 24,822 crore, consisting of the public sector outlay of Rs 15,902 crore. The actual public sector expenditure during the Fourth Plan was estimated at Rs 15,779 crore. The Fifth Plan envisaged public sector outlay of Rs 39,322 crore and the expected private investment was Rs 27,049 crore. The actual expenditure of the public sector during the Fifth Plan was Rs 39,426 crore. With re-ordering of investment priorities, the Plan for 1979-80 envisaged a public sector outlay of Rs 12,601 crore against which the actual expenditure was Rs 12,176 crore. The 1980-81 Plan outlay was fixed at Rs 15,109 crore against which the actual expenditure is estimated at Rs 14,832 crore. The Annual Plan for 1981-82 has a public sector outlay of Rs 17,417 crore against which the actual expenditure is estimated at Rs 18,211 crore. For 1982-83, the revised public sector plan outlay amounted to Rs 21,357 crore. For 1983-84 total Plan outlay of Rs 25,480 crore was fixed. The budget estimates for 1984-85 is of the order of Rs 30,073 crore.

The progress of the Plan expenditure in the public sector for Sixth Five Year Plan has been shown in the table 13.1.

Achievements

During the First Plan, owing largely to increase in agricultural production the national income went up by 18 per cent as against the target of 12 per cent. The increase in the Second Plan was 20 per cent as against the target of 25 per cent. In the Third Plan, national income (revised series) at 1960-61 prices rose by 20 per cent in the first four years but declined by 5.7 per cent in the last year. During the three Annual Plans there was modest increase in the national income. In the initial years of the Fourth Plan, the growth rate in national income and per capita income was quite satisfactory. In the latter part of the Plan, there was slackening in the growth rate. As against the projected overall rate of 5.7 per cent per annum during the Fourth Plan, the realised rate of growth is estimated at 3.3 per cent during 1969-74.

The growth rate in national income achieved during the Fifth Plan is estimated at 5.1 per cent as against the target of 4.4 per cent. The growth rate in national income at 1970-71 prices was 7.9 per cent in 1980-81, 4.9 per cent in 1981-82, 1.7 per cent in 1982-83 and is likely to be in the range of 6-7 per cent in 1983-84.

The index of agricultural production with the triennium ending 1969-70 as base rose from 71.9 at the end of First Plan to 86.7 at the end of Second Plan. During the Third Plan, performance of agriculture was not quite satisfactory. Widespread droughts in 1965-67 slowed down the rate of growth and led to increased imports of foodgrains and other items. The index of agricultural production receded to 80.8 in 1965-66 and 80.7 in 1966-67. Subsequent years, however, recorded substantial improvements, and the index number reached 98.9 in 1967-68, further increasing steadily to 112.4 in 1973-74. The next year, 1974-75 was again a bad one for agriculture when the index declined to 108.6. This was followed by considerable

TABLE 13.1

PROGRESS OF SIXTH PLAN EXPENDITURE—CENTRE, STATES AND UNION TERRITORIES

(Rs in crore)

Heads of Development	Sixth Plan Outlay 1980-85	Annual Plan 1980-81 (Actuals)	Annual Plan 1981-82 (Actuals)	Annual Plan 1982-83 (R.E.)	Annual Plan 1983-84 (Plan outlay)	Annual Plan 1984-85 (B.E.)
1	2	3	4	5	6	7
I. Agriculture	5,695·1	981·5	1,129·4	1,248·8	1,397·6	1,534·5
II. Rural Development	5,363·7	1,040·2	1,100·9	1,234·4	1,278·7	1,801·8
III. Special Area Programme	1,480·0	206·4	258·5	320·6	362·5	424·5
IV. Irrigation and Flood Control	12,160·0	1,777·3	1,948·4	2,144·0	2,464·2	2,674·6
V. Energy	26,535·4	3,828·0	5,064·9	6,737·0	8,323·4	9,492·5
1. Power	19,265·4	2,656·8	3,182·3	3,821·4	4,532·2	5,209·9
2. New and Renewable Sources of Energy	100·0	4·3	13·9	19·8	30·0	39·0[1]
3. Petroleum	4,300·0	735·2	1,204·8	2,023·7	2,815·0	3,126·6
4. Coal	2,870·0	431·7	663·9	872·1	946·2	1,117·0
VI. Industry and Minerals	15,017·6	2,194·5	2,777·9	3,021·5	3,492·5	4,595·2
1. Village and Small Scale Industries	1,780·5	273·2	322·9	330·6	411·2	487·0
2. Large and Medium Industries	13,237·1	1,921·3	2,455·0	2,690·9	3,081·3	4,108·2
VII. Transport	12,412·0	2,163·0	2,583·1	2,728·0	3,033·6	3,449·3
1. Railways	5,100·0	973·0	1,210·0	1,332·0	1,342·3	1,650·3
2. Others	7,312·0	1,190·0	1,373·1	1,396·0	1,691·3	1,799·0
VIII. Communications/Information and Broadcasting	3,134·3	356·7	576·1	607·9	704·5	979·8
IX. Science and Technology	865·2	97·4	148·3	215·9	238·7	344·0
X. Social Services	14,035·2	2,074·6	2,487·2	2,953·2	3,682·1	4,318·3
1 Education	2,523·7	339·5	435·7	537·6	686·5	839·3
2. Health and Family Planning	2,831·0	411·5	530·4	683·0	798·0	985·5
3. Housing and Urban Development	2,488·4	477·3	488·1	538·8	650·8	679·0
4. Other Social Services	6,192·1	846·3	1,033·0	1,193·8	1,546·8	1,814·5
XI. Others	801·5	112·8	136·2	145·4	502·5[2]	458·6[3]
XII Total (I to XI)	97,500·0	14,832·4 (15,023·4)	18,210·9 (18,372·9)	21,356·7 (21,728·7)	25,480·3	30,073·1
(a) Central Plan	47,250·0	7,049·3	9,197·0	11,603·5	13,870·2	17,351·0
(b) State Plans	48,600·0	7,527·5 (7,718·5)	8,666·3 (8,828·3)	9,338·2 (9,710·2)	11,129·6	12,164·6
(c) Union Territory Plans	1,650·0	255·6	347·6	415·0	480·5	557·5

1. Includes Rs 2 crore for energy development.
2. Includes Rs 300 crore for special incentive schemes for better performance by states.
3. Includes Rs 200 crore for special incentive schemes for better performance by states. Figures for 1984-85 are those as adopted in Budget at a Glance 1984-85 at the time of presentation of Budget for 1984-85. Figures in respect of some of the states were provisional as the discussions with those states were inconclusive.

Note : Figures in brackets are inclusive of expenditure (Rs 191 crore in 1980-81, Rs 162 crore in 1981-82 and Rs 372 crore in 1982-83) on works financed by Central assistance for relief from natural calamities.

improvement in 1975-76 when the index reached 125. In 1976-77 the index registered a decline of 8.8 points and stood at 116.2 but again shot up to 132.8 in 1977-78 and 137.9 in 1978-79. The year, 1979-80 witnessed a fall by 21 points and the index number of agricultural production stood at 116.9. The index stood at 135.2 in 1980-81 and increased to 142.7 in 1981-82. During 1982-83, kharif production was adversely affected due to monsoon which was inadequate in coverage and uneven in its timing with the result that agricultural index fell to 137 in that year. It is expected that the overall foodgrains production during 1983-84 might be of the order of 14.3 crore tonnes *i.e.* about 1.5 crore tonnes higher than the last year's crop of 12.8 crore tonnes.

Net irrigated area increased from 2.08 crore hectares in 1950-51 to 2.27 crore hectares at the end of the First Plan, 2.46 crore hectares at the end of the Second Plan, 2.63 crore hectares at the end of the Third Plan and 2.90 crore hectares in 1968-69. By the end of the Fourth Plan, the net irrigated area was 3.25 crore hectares and by 1978-79 the figure was 3.66 crore hectares. The gross irrigated area under irrigation increased from 5.42 crore hectares in 1980-81 to 5.62 crore hectares in 1981-82, 5.85 crore hectares in 1982-83 and 6.10 crore hectares in 1983-84.

Power development during the last three decades has been significant. Successive plans with large outlay on power development have added substantial generating capacity and a basic transmission and distribution system has been developed. The power systems have developed from rudimentary stage of isolated generating stations to the stage of fairly well integrated systems in most of the states and emergence of regional and inter-regional grids. The total installed generating capacity which was only 2,300 mw in 1950 increased to over 31,184 mw by the end of March 1980. During the Sixth Plan, the addition to installed generating capacity in the first three years (1980-83) had been 7,058 mw.

Under rural electrification programme, a total of 3.18 lakh villages had been electrified out of a total of 5.76 lakh villages by the end of March 1983. The number of pumpsets in operation in the country by March 1983 was 49.38 lakhs. Extension of power to tribal areas, hilly areas and electrification of *bastis* for scheduled castes and scheduled tribes is being accorded increasing priority.

Large investments in the industrial and mineral sector, particularly from the beginning of the Second Plan have brought about a significant transformation in the industrial scene. The rate of industrial growth has not been uniform during this period. After a steady growth of about 8 per cent during the initial period of 14 years, there was a fluctuating trend in the industrial growth rate approaching near stagnancy in 1966-68 going up to a level of 9.6 per cent in 1976-77 and dipping to —1.4 per cent in 1979-80. During the last decade (1970-71 to 1979-80) the average growth rate has been about 4 per cent per annum. There was, however, recovery in 1980-81 when the index recorded an increase of 4 per cent.

The educational system has recorded a phenomenal growth during the last three decades. The number of institutions was 2,86,86,000 in 1950-51. The corresponding figure for 1981-82 is 6,82,70,000.

In elementary education (classes I-VIII), the enrolment of students in 1981-82 is of the order of 946.19 lakh comprising 589.48 lakh boys and 356.71 lakh girls. This works out as 69 per cent (83 per cent boys and 53 per cent girls) of population in the age-group of 6-14. Along with this rapid expansion of schooling facilities the literacy rate amongst the population has gone up from 16.67 per cent in 1951 to 36.17 per cent in 1981. Nonetheless, there were over 46 crore illiterates in 1981. According to the Sixth Plan, it is envisaged to achieve universal elementary education and eradication of adult illiteracy in the age-group 15-35 by 1990.

REVISED TWENTY POINT PROGRAMME

The earlier 20-Point Programme was announced by the Prime Minister on 1 July 1975. Considerable progress was made in implementing this programme in 1975-76 and 1976-77. The programme was reemphasised and revitalised since January 1980 and this was reflected in the programmes and policies incorporated in the Annual Plans. It has been one of the principal guiding factors in the formulation of the Sixth Plan.

Many of the objectives of the earlier programme have been accomplished. In view of the fulfilment of several targets, economic and social developments that have taken place since 1975 and the objectives, strategy and development programmes included in the Sixth Plan, the earlier 20-Point Programme has been redefined and recast.

The Revised 20-Point Programme announced by the Prime Minister on 14 January 1982 is to :

1. Increase irrigation potential, develop and disseminate technologies and inputs for dry land agriculture.
2. Make special efforts to increase production of pulses and vegetable oilseeds.
3. Strengthen and expand coverage of integrated rural development and national rural employment programme.
4. Implement agricultural land ceilings, distribute surplus land and complete compilation of land records by removing all administrative and legal obstacles.
5. Review and effectively enforce minimum wages for agricultural labour.
6. Rehabilitate bonded labour.
7. Accelerate programmes for the development of scheduled castes and tribes.
8. Supply drinking water to all problem villages.
9. Allot house sites to rural families who are without them and expand programmes for construction assistance to them.
10. Improve the environment of slums, implement programmes of house building for economically weaker sections and take measures to arrest unwarranted increase in land prices.
11. Maximise power generation, improve the functioning of electricity authorities and electrify all villages.
12. Pursue vigorously programmes of afforestation, social and farm forestry and the development of biogas and other alternative energy sources.
13. Promote family planning on a voluntary basis as a peoples' movement.

14. Substantially augment universal primary health care facilities and control of leprosy, TB and blindness.
15. Accelerate programmes of welfare for women and children and nutrition programmes for pregnant women, nursing mothers and children, specially in tribal, hill and backward areas.
16. Spread universal elementary education for the age-group 6-14 with special emphasis on girls, and simultaneously involve students and voluntary agencies in programmes for the removal of adult illiteracy.
17. Expand the public distribution system through more fair price shops, including mobile shops in far-flung areas and shops to cater to industrial workers, students' hostels and make available to students text books and exercise books on a priority basis and to promote a strong consumer protection movement.
18. Liberalise investment procedures and streamline industrial policies to ensure timely completion of projects. Give handicrafts, handlooms, small and village industries all facilities to grow and to up-date their technology.
19. Continue strict action against smugglers, hoarders and tax evaders and check black money.
20. Improve the working of the public enterprises by increasing efficiency, capacity utilisation and the generation of internal resources.

The programme focusses attention on some of the most important social and economic programmes included in the Sixth Plan and seeks to impart greater dynamism to them. While the thrust of the revised programme continues to be on providing better living conditions for the less privileged sections of the population, it also aims at all-round improvement in productivity.

The Revised 20-Point Programme forms an integral part of the Sixth Plan with emphasis on certain high priority areas of national development effort. The targets of the revised programme are broadly consistent with those of the Sixth Plan. A successful implementation of this programme, as well as of the Sixth Plan itself, would depend crucially on our ability to mobilise financial resources in line with the contemplated investments.

The Revised 20-Point Programme lays particular stress on programmes designed to ameliorate the economic and social conditions of the poorer and less privileged sections of the community. The strengthening and expansion of the coverage of the integrated rural development and national rural employment programmes, implementation of agricultural land ceilings and distribution of surplus land as well as the growth of handicrafts, handlooms, small and village industries, etc., are intended to increase employment, strengthen the resource base of the rural poor and raise their incomes. The review and effective enforcement of minimum wages for agricultural labour would also contribute to increasing the incomes of the poor. In addition, it is proposed to accelerate the development programmes having a bearing on the welfare of scheduled castes and scheduled tribes and bonded labour.

To enlarge the availability of basic amenities and facilities particularly for the weaker sections, it is proposed to supply drinking water to all problem villages, allot house sites to rural families and expand programmes of construction assistance to them, improve the environment of slums and implement programmes of house building for economically weaker sections, augment universal primary health care facilities and control leprosy, TB and blindness, spread universal elementary education, implement programmes for the removal of illiteracy, electrify all villages and accelerate the programmes of welfare for women and children.

At the same time, the Revised 20-Point Programme aims at increasing the overall production and productivity in the economy. In view of the critical importance of irrigation for increasing agricultural production, the programme lays emphasis on increasing irrigation potential. It also stresses the need for the development and dissemination of technologies and inputs for the improvement of dry land agriculture. Special efforts will be made to increase the production of oilseeds and pulses in view of the continued imbalance between the demand and supply in their case.

As availability of power constitutes an important inputs for increasing agricultural as well as industrial production, the programme envisages maximisation of power generation. At the same time, it emphasises the need for development of biogas and other alternate energy sources. The programmes of afforestation and social and farm forestry will be pursued vigorously. To stimulate production and investment, industrial procedure would be liberalised and industrial policies streamlined. Particular stress has been laid on improving the working of the public enterprises by increasing efficiency, capacity utilisation and the generation of internal resources.

To make available essential commodities at reasonable prices, the programme envisages expansion of the public distribution system through more fair price shops, including mobile shops in far-flung areas and shops to cater to the needs of industrial workers and students' hostels. Text books and exercise books will be made available to students on a priority basis. Besides, efforts will be made to promote a strong consumer protection movement. Strict action is contemplated against smugglers, hoaders, tax evaders, etc., and for checking the generation of black money. Measures to arrest unwarranted increase in land prices will bring relief to a large number of people.

In view of the urgent need to control the growth of population as brought out by the 1981 census, the programme lays special emphasis on promoting family planning on a voluntary basis as a peoples' movement.

The National Development Council (NDC) at its meeting held on 14 March 1982, expressed its determination to implement effectively the Revised 20-Point Programme which contains the core elements of the Sixth Plan. NDC stressed the need for effective monitoring of both the Revised 20-Point Programme and of the Sixth Plan programmes and projects as a whole. It emphasised the important role assigned to the banking system in the implementation of the anti-poverty programmes included in the Revised 20-Point Programme.

Effective implementation and monitoring of the programme are very essential to achieve the objectives. The Central ministries and state governments have been requested to take all possible steps for effective implementation of the programme.

Review of 1982-83 Programme

During 1982-83 an outlay of Rs 8,427.42 crore had been provided for the implementation of the 20-Point Programme—Rs 2,165.70 crore at the Centre and Rs 6,261.72 crore for states and union territories. The expenditure during the year was estimated at Rs 8,434.62 crore—Rs 2,258.08 crore for Centre and Rs 6,176.54 crore for states and union territories.

As a result of continuous and effective monitoring of the 20-Point Programme undertaken during 1982-83, the performance of states/union territories had improved substantially. Cent per cent or over cent per cent progress had been achieved under (i) irrigation, (ii) IRDP, (iii) rehabilitation of bonded labour, (iv) scheduled castes welfare, (v) rural water supply, (vi) tree plantation and (vii) ICDS blocks. Ninety per cent or more has been achieved under (i) scheduled tribes welfare, (ii) NREP, (iii) house sites, (iv) slum population, (v) village electrification, (vi) Sub-Centres and (vii) elementary education.

Even though progress in certain sectors was below expectations the implementation of the programme as a whole had been very satisfactory. Quality-wise also the result during the year were superior in view of the much greater monitoring of the programme undertaken by the state governments, Planning Commission and the Central ministries.

Review of 1983-84 Programme

An outlay of Rs 10,089.99 crore was provided for the implementation of the programme—Rs 2,840.10 crore at the Centre and Rs 7,249.89 crore for the states and union territories. The outlays on the 20-Point Programme during 1983-84 accounted for a step up of 19.7 per cent over the outlays during 1982-83. The anticipated expenditure during the year is estimated at Rs 10,019.18 crore—Rs 2,948.32 crore for the Centre and Rs 7,070.86 crore for states and union territories.

The performance of states/union territories during the year has improved further. Cent per cent or over cent per cent progress has been achieved under (i) pulses production, (ii) oilseeds production, (iii) IRDP, (iv) scheduled castes families assisted, (v) scheduled tribes families assisted, (vi) rural water supply, (vii) house sites distribution, (viii) slum improvement, (ix) village electrification, (x) tree plantation, (xi) biogas plants, (xii) primary health centres, and (xiii) ICDS blocks. Ninety per cent or more has been achieved under (i) irrigation potential, (ii) pumpsets energisation, and (iii) adult literacy. Progress, however, has been rather unsatisfactory (*i.e.* less than 90 per cent) under (i) NREP, (ii) surplus land distribution, (iii) bonded labour rehabilitation, (iv) construction assistance, (v) economically weaker sections—housing, (vi) sterilisation, (vii) sub-centres, and (viii) elementary education.

Although the progress is not uniform and even under all the points and is slow and poor under certain points, the implementation of the programme, as a whole, has been quite satisfactory. The results during the year were superior in quality as much greater monitoring of the programme was undertaken at all levels.

The point-wise break-up of financial outlays and physical targets is given in tables 13.2 and 13.3.

TABLE 13.2

FINANCIAL OUTLAYS FOR THE REVISED TWENTY POINT PROGRAMME

(*Rs in crore*)

Item	1982-83 Actual Expenditure	1983-84 Revised outlay	1984-85 Outlay		
			Centre	State/ Union Territory	Total
1. Irrigation Potential	1,850·13	2,118·99	30·50	2,216·01	2,246·51
dryland	—	1·16	4·40	—	4·40
2. Production of pulses & oilseeds	48·87	51·01	38·00	27·50	65·50
3. IRDP and NREP	754·32	822·32	456·05	441·44	897·49
RLEGP	—	100·00	400·00	—	400·00
4. Land Reforms	62·30	67·35	7·00	64·66	71·66
5. Minimum wages	0·56	1·75	0·30	1·65	1·95
6. Rehabilitation of bonded Labour	8·41	8·51	4·50	5·08	9·58
7. SC/ST welfare	414·49	478·67	209·03	320·60	529·63
8. Rural water supply	459·80	596·99	242·50	365·87	608·37
9. House sites/Construction assistance	92·31	114·94	—	119·76	119·76
10. Slum improvement	27·15	50·46	—	39·32	39·32
11. Power	3,713·52	4,214·66	1,764·42	3,445·48	5,209·90
12. Afforestation	19·60	23·50	26·25	205·29[1]	231·54
Biogas	7·00	13·00	22·50	—	22·50
13. Family planning	284·76	374·90	438·00	—	438·00
14. Primary health centre	89·40	121·87	36·46	122·29	158·75
15. Women and Child welfare	97·97	150·57	47·40	125·80	173·20
16. Elementary and adult education	178·38	277·21	48·67	289·81	338·48
17. Public distribution system	0·03	0·46	1·00	—	1·00
18. Village and small industries	327·12	430·86	276·85	210·16	487·01
Total	8,434·62	10,019·18	4,053·83	8,000·72	12,054·55

1. The total outlay under afforestation is to be taken against the earlier decision to forest and not only outlay for Centrally sponsored scheme.

TABLE 13·3

REVISED TWENTY POINT PROGRAMME—PHYSICAL TARGETS AND ACHIEVEMENTS

Sl. No.	Item	Unit	1982-83		1983-84		1984-85 Targets
			Target	Achievement	Target	Achievement	
1.	Irrigation potential	lakh hectares	23·30	23·40	23·70	23·20	23·88
2.	(a) Pulses production	lakh tonne	135	119	130	133	130
2.	(b) Oilseeds production	Do.	120	118	125	134·3	130
3.	(a) IRDP	lakh families	31·38	32·60	30·54	34·85	30·30
3.	(b) NREP	lakh man days	3,532	3,378	3,215	2,879	3,091
3.	(c) RLEGP	Do.	—	—	—	—	3,000
4.	Surplus land	'000 acres	530	255	284	191	211
6.	Bonded labour	numbers	35,828	36,019	28,804	17,143	30,633
7.	(a) Scheduled Caste families	lakh numbers	19·82	21·25	24·98	27·03	25·26
7.	(b) Scheduled tribe families	Do.	5·50	5·20	7·62	9·30	9·63
8.	Rural water supply	number of villages	42,342	54,526[1]	48,846	55,588[2]	41,859
9.	(a) House sites	lakh numbers	10·43	10·07	8·74	11·78	8·20
9.	(b) Construction Assistance	Do.	7·39	3·77	5·56	3·64	4·73
10.	(a) Slum Improvement	lakh	18·40	17·17	21·20	23·46	18·44
10.	(b) Economically weaker sections-houses for	persons in '000	186·0	145·0	404·7	148·2	1·74
11.	(a) Villages Electrification	numbers	25,000	23,572	23,631	23,743	23,195
11.	(b) Pumpsets Energisation	lakh numbers	4·30	3·02	3·68	3·37	3·83
12.	(a) Tree Plantation	numbersin crore	195·54	211·71	225·00	242·33	250·00
12.	(b) Biogasplants	numbers	75,000	57,800	75,000	92,590	1,46,418[3]
13.	Sterilisation	lakh numbers	45·00	39·81	58·12	43·71	58·75
14.	(a) Primary health centres to be sanctioned	numbers	209	188	405	1231	197
14.	(b) Sub Centres	numbers	7,931	7,668	9,010	6,634	8,271
15.	I.C.D.S. blocks	numbers	320	320	200	200	183
16.	(a) Elementary education enrolement	numbers in '000	4,092	4,070	4,702	4,145	5,386
16.	(b) Adult Literacy	numbers in '000	4,500	4,027	5,157	5,042	6,155

1. Includes 10,376 non-problem villages.
2. Includes 5,840 non-problem villages.
3. Including 30,000, biogas plants to be done by Khadi and Village Industries Commission.

14 AGRICULTURE

Agricultural sector contributes nearly 40 per cent of the net national product, provides livelihood to about 60 per cent of the total working force and accounts for nearly 30 per cent of country's exports. It supplies the bulk of wage goods required by the non-agricultural sector and raw materials for a large section of industry. Transport, marketing, processing and other aspects of agricultural production and utilisation also have a strong bearing on the tertiary sector of the economy.

The secular growth rate in agricultural production for the period 1949-50 to 1983-84 exceeds 2.55 per cent per annum. During the same period, foodgrains production has more than doubled from 5.49 crore tonnes to an estimated level of 14.98 crore tonnes. The cropping pattern is more diversified and cultivation of commercial crops has received a new impetus in line with domestic demands and export requirements.

During the post green revolution period *i.e.* from 1967-68 to 1983-84, the country is expected to attain a growth rate of 2.55 per cent per annum in agricultural production. During the same period, foodgrains production has increased from 9.51 crore tonnes to an estimated level of 14.98 crore tonnes. The cropping pattern has undergone perceptible changes, and non-traditional crops like summer *moong*, soyabean, summer groundnut, sunflower, etc., are gradually gaining importance. In some of the areas, a short duration third crop is also being raised by utilising the residual moisture available from post *kharif*/post *rabi* cultivation, thus enabling an optimum utilsation of the scarce land resources.

The per capita net availability of foodgrains has reached 453.9 grams per day in 1982 as compared to 430.9 grams per day in the mid-fifties. Availability of edible oils has increased from 2.5 kg in 1950s to 4.3 kg in 1982-83. In spite of mounting population pressure, the country has been able to sustain and improve the availability of consumer articles and thus raise the standards of living of the people.

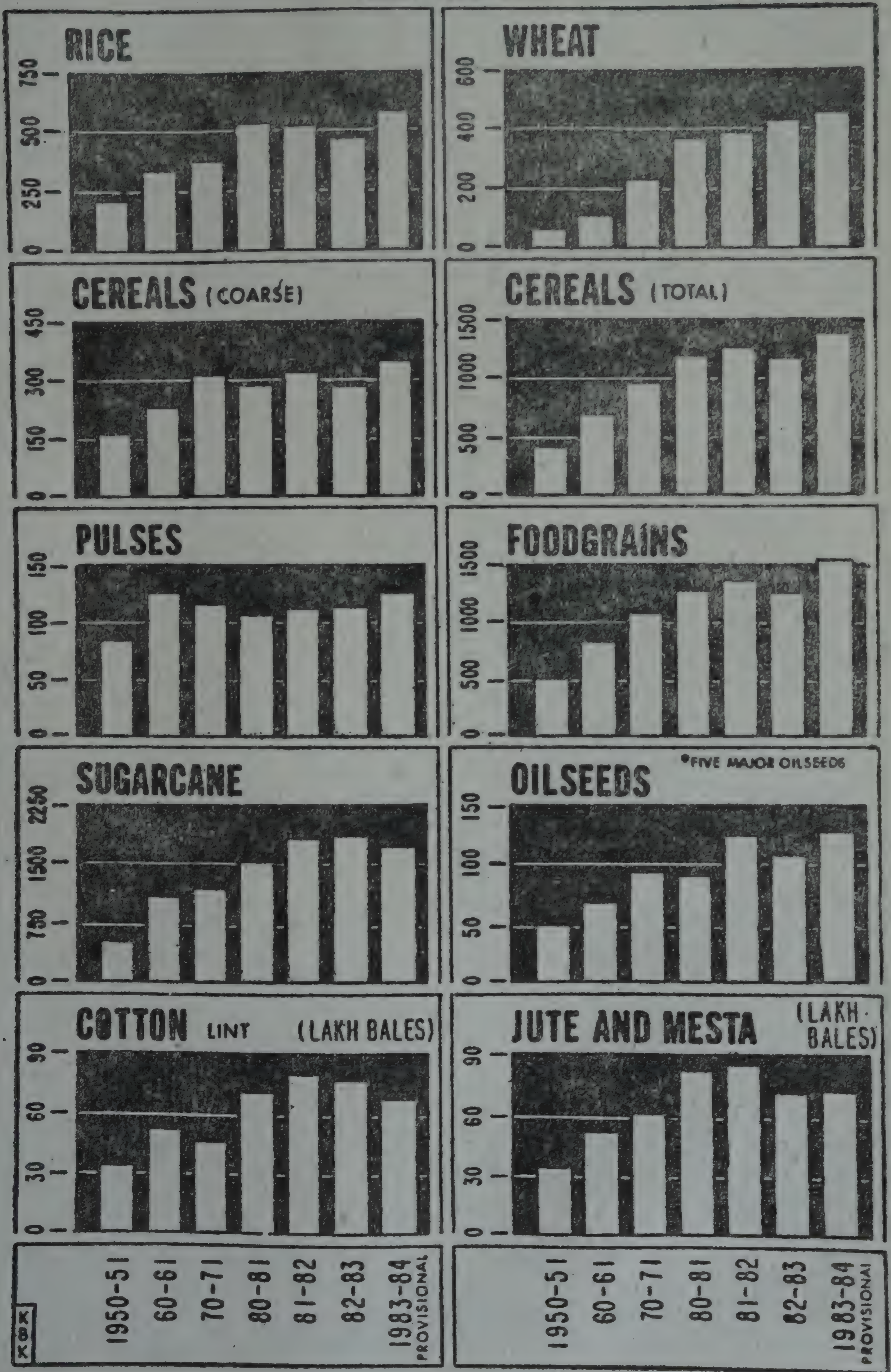
In 1982, the country witnessed one of the severest droughts due to failure of monsoon. As a result, there was a sizeable drop of about one crore tonnes in *kharif* foodgrains production from 7.94 crore tonn in 1981-82 to 6.95 crore tonnes in 1982-83. The production of *kha* oilseeds, likewise, came down steeply from 71.5 lakh tonnes to 54. lakh tonnes. However, special efforts made during the following *ra* season (of 1982-83 crop year) resulted in a record production, whic partially offset the loss during the drought. The total production wa of the order of 12.84 crore tonnes in respect of foodgrains and 1.0 crore tonnes for oilseeds. On the other hand, production of sugarca attained a new peak level of 18.91 crore tonnes. Production of cotto (77 lakh bales) and jute and *mesta* (72 lakh bales) declined compared to 1981-82. Table 14.1 shows area, production and yield principal crops during 1950-51, 1960-61, 1970-71 and 1980-81 1982-83.

TABLE 14.1
AREA, PRODUCTION AND YIELD OF PRINCIPAL CROPS

		Years relate to crop years (July-June)					
Crops		1950-51	1960-61	1970-71	1980-81	1981-82	1982-83
1		2	3	4	5	6	7
Rice .	A	308 ·10	341 ·28	375 ·92	401 ·52	407 ·08	377 ·9
	P	205 ·76	345 ·74	422 ·25	536 ·31	532 ·48	464 ·8
	Y	0 ·67	1 ·01	1 ·12	1 ·34	1 ·31	1 ·2
Wheat .	A	97 ·46	129 ·27	182 ·41	222 ·79	221 ·44	231 ·5
	P	64 ·62	109 ·97	238 ·32	363 ·13	374 ·52	425 ·0
	Y	0 ·66	0 ·85	1 ·31	1 ·63	1 ·69	1 ·8
Cereals (coarse) .	A	376 ·74	449 ·63	459 ·50	417 ·80	424 ·42	399 ·8
	P	153 ·76	237 ·43	305 ·47	290 ·18	310 ·88	277 ·9
	Y	0 ·41	0 ·53	0 ·67	0 ·70	0 ·73	0 ·7
Gram .	A	75 ·70	92 ·76	78 ·39	65 ·84	78 ·68	72 ·2
	P	36 ·51	62 ·50	51 ·99	43 ·28	46 ·42	50 ·9
	Y	0 ·48	0 ·67	0 ·66	0 ·66	0 ·59	0 ·7
Pulses (total) .	A	190 ·91	235 ·63	225.34	224 ·57	238 ·43	223 ·8
	P	84 ·11	127 ·04	118.18	106 ·27	115 ·07	115 ·6
	Y	0 ·44	0 ·54	0 ·52	0 ·47	0 ·48	0 ·5
Foodgrains (total) .	A	973 ·21	1,155 ·81	1,243 ·16	1,266 ·67	1,291 ·38	1,233 ·18
	P	508 ·25	820 ·18	1,084 ·22	1,295 ·89	1,332 ·95	1.283 ·50
	Y	0 ·52	0 ·71	0 ·87	1 ·02	1 ·03	1 ·04
Groundnut	A	44 ·94	64 ·63	73 ·26	68 ·01	74 ·29	73 ·45
	P	34 ·81	48 ·12	61 ·11	50 ·05	72 ·23	55 ·53
	Y	0 ·78	0 ·75	0 ·83	0 ·74	0 ·97	0 ·76
Rapeseed and Mustard .	A	20 ·71	28 ·83	33 ·23	41 ·13	43 ·99	41 ·94
	P	7 ·62	13 ·47	19 ·76	23 ·04	23 ·82	24 ·72
	Y	0.37	0.47	0.59	0.56	0 ·54	0.59

AGRICULTURAL PRODUCTION

(LAKH TONNES)



1		2	3	4	5	6	7
Five Major Oilseeds .	A	107·27	137·70	154·18	155·57	168·00	166·47
	P	51·58	69·82	92·59	83·83	109·88	93·48
	Y	0·48	0·51	0·60	0·54	0·65	0·56
Sugarcane (cane) .	A	17·07	24·15	26·15	26·67	31·93	33·65
	P	570·51	1,100·01	1,263·68	1,542·48	1,863·58	1,891·29
	Y	33·42	45·55	48·32	57·84	58·36	56·21
Cotton[1] .	A	58·82	76·10	76·05	78·23	80·57	80·74
	P	30·44	56·04	47·63	70·10	78·84	77·17
	Y	0·09	0·13	0·11	0·15	0·17	0·16
Jute and *Mesta*[2] .	A	5·71[3]	9·03	10·79	13·00	41·49	10·24
	P	33·09	52·63	61·93	81·60	83·70	71·74
	Y	1·04	1·05	1·03	1·13	1·31	1·26
Tobacco .	A	3·57	4·01	4·47	4·52	4·44	5·01
	P	2·61	3·07	3·62	4·81	5·20	5·94
	Y	0·73	0·77	0·81	1·07	1·17	1·19

1. Lakh bales of 170 kg each
2. Lakh bales of 180 kg each
3. 1950-51 data relate to jute crop only.

A —Area in lakh hectares
P —Production in lakh tonnes
Y —Yield in tonne per hectare

A production target of 14.2 crore tonnes was set during 1983-84 for foodgrains. As a result of several innovative extension measures taken by the Government, coupled with generally favourable weather and rainfall conditions, the country is poised to achieve a record crop of about 14.98 crore tonnes. This would imply an increase of 16 per cent over the previous year's production and a growth rate of more than 4 per cent per annum during the first four years of the Sixth Plan. Oilseeds production is also expected to be near the Annual Plan target of 125 lakh tonnes. However, production of sugarcane, jute (including *mesta*) might decline, on account of area shrinkages. Cotton production is also expected to be lower because of losses in productivity due to excessive rains and consequent pest attack in some parts of the country.

PLAN EXPENDITURE

The Sixth Plan accords high priority to agriculture and rural development with the main objectives of stepping up agricultural production, generating substantial employment and income opportunities in the rural areas and strengthening the impulses of modernisation for achieving self-reliance. For implementing various development programmes in agriculture and allied sectors, the public sector outlay envisaged in the Sixth Plan is of the order of Rs 12,539 crore. The public sector outlay on these sectors, thus, represents an increase of about 194 per cent over the approved public sector outlay of about Rs 4,218 crore over the Fifth Plan.

A mid-term appraisal of the Sixth Plan covering the progress of the first three years of the Plan indicates that the estimated growth over the Plan period will be close to the Plan target, and the comparatively efficient use of resources together with structural adjustments have developed significantly the resilience and self-reliance of the economy. In the case of agriculture and allied sectors, this is well reflected in the achievements of foodgrains production. It is expected that 84 per cent of the Sixth Plan outlay will have been utilised by the end of the fourth year of the Plan. In the case of all sectors, 83 per cent of the Sixth Plan outlay of Rs 97,500 crore is expected to have been utilised by the end of the fourth year of the Plan.

SEASONS

There are three main crop seasons, namely, *kharif, rabi* and summer. The major *kharif* crops, are rice, *jowar, bajra,* maize, cotton, sugarcane, sesame and groundnut. The major *rabi* crops are wheat, *jowar,* barley, gram, linseed, rapeseed and mustard. Rice, maize and groundnut are grown in summer season also.

FOODGRAINS

Production

India experienced a severe and widespread drought during the *kharif* (south-west monsoon) season of 1982-83 resulting in a decline in the production of cereals, pulses and oilseeds. The *kharif* foodgrains production declined by 100 lakh tonnes from 794 lakh tonnes in 1981-82 to 695 lakh tonnes in 1982-83. The production of oilseeds during the season came down by 17.4 lakh tonnes from 71.5 to 54.1 lakh tonnes.

However, as a result of a massive compensatory effort to raise production in the following *rabi* (winter and summer) season, a record *rabi* crop could be harvested. The production of foodgrains during the *rabi* season achieved a record level of 589 lakh tonnes, which was about 50 lakh tonnes higher than the production in the previous year. *Rabi* oilseeds also increased to a new peak level of 51.5 lakh tonnes.

These gains enabled the country to offset some of the losses suffered during the drought in 1982. The overall foodgrains production during 1982-83 came to 12.84 crore tonnes, which marked a decline of 49 lakh from previous year's level. This contrasts sharply with a decline of 222 lakh tonnes in foodgrains production during the previous drought experienced in 1979-80, underscoring the growing strength and resilience of Indian agriculture.

Due to sustained efforts to raise agricultural production and productivity in the country, India is poised for a quantum jump in the productoin of foodgrains and oilseeds during 1983-84. According to current assessment, foodgrains production during 1983-84 is likely to exceed 14.40 crore tonnes, which is 110 lakh tonnes more than the previous peak achieved in 1981-82. As for oilseeds, the current expectation places the production at 125 lakh tonnes which will also be a new record level.

Price Situation

The period following June 1982 witnessed a considerable rise in the prices of foodgrains in the wake of widespread drought, floods and cyclones. The wholesale prices of cereals showed a continuous rise during the period June 1982 to March 1983 with the index moving up from 222.0 to 260.1 *i.e.* an increase of 17.2 per cent. There was a fall in cereals prices in April-May 1983 due to arrivals from 1982-83 *rabi* crop. However, the prices again started moving up from June 1983 and the index number of wholesale prices of cereals touched the peak level of 271.6 in August 1983 as against 239.7 a year ago thereb showing a rise of 13.3 per cent. From end-August 1983, cereals price started declining as a result of a record *kharif* harvest of 1983, clos on the heels of a record *rabi* crop. The wholesale price index o cereals at 254.0 in January 1984 was 6.5 per cent lower than the peak index of 271.6 in August 1983. At this level of 254.0 also, the index was 3.3 per cent higher than a year ago level of 246.0.

The wholesale prices of pulses recorded a rise during July-Augus 1982. However, with the arrival of the new *kharif* crop, the wholesale price index of pulses registered a fall and the index of pulses which stood at 323.5 in August 1982 dropped by 9.9 per cent to 291.4 in February 1983. From March 1983 onwards, prices tended to move up and the index had touched the level of 339.2 in August 1983 and 352.6 in November 1983, barring a marginal fall in September-October 1983. Since November 1983, pulses prices have risen sharply and the wholesale price index of pulses at 402.0 in January 1984 was 36.8 per cent higher than a year ago, when the pulses price index stood at the level of 293.9. Since the end of January 1984, however, prices have shown a declining trend.

Price Policy

For 1983-84 *rabi* marketing season, the procurement price of wheat of all varieties was raised from Rs 142 to Rs 151 per quintal. The issue price of wheat released from the central pool for public distribution was increased from Rs 160 to Rs 172 per quintal from 15 April 1983. For 1984-85 *rabi* marketing season, the procurement price of wheat has been fixed at Rs 152 per quintal. For the *kharif* marketing season 1983-84 the procurement price for paddy has been fixed at Rs 132 per quintal for common, Rs 136 per quintal for fine and Rs 140 per quintal for superfine varieties. The issue prices for both raw and parboiled rice have been raised to Rs 208 per quintal for common, Rs 220 per quintal for fine and Rs 235 per quintal for superfine varieties from 16 January 1984.

The procurement price for coarse grains, namely *jowar, bajra,* maize and *ragi* for 1983-84 marketing year has been fixed at Rs 124 per quintal. No issue price for *jowar,* maize and *ragi* has been fixed as these grains will be purchased by the state governments and distributed at prices fixed by them. The Food Corporation of India was asked to purchase *bajra* in Rajasthan, Gujarat and Haryana at the support price. The issue price of such *bajra* has been fixed at Rs 157 per quintal with effect from 29 December 1983.

Procurement

Government reiterated its commitment to purchase all foodgrains of fair average quality offered by the producers at the support prices. Procurement of cereals out of 1982-83 crop reached the record level of 154.9 lakh tonnes, surpassing the earlier peak of 152.7 lakh tonnes out of 1981-82 crop. Procurement of *kharif* cereals out of 1983-84 crop started on 1 October 1983. Till 7 March 1984 a quantity of 64.2 lakh tonnes of *kharif* cereals was procured as against 60 lakh tonnes on the same date last year.

Food Corporation of India

The Food Corporation of India (FCI) set up in 1965 under an Act, serves the nation in the vital areas of food procurement, storage and distribution, protecting the interest of both the farmers and the consumers. The Corporation has an annual turnover of over Rs 8,110 crore.

Besides the annual purchase of over 150 lakh tonnes of foodgrains, FCI also handles imported foodgrains.

The Corporation has its own covered storage of about 85 lakh tonnes of scientific storage accommodation. More storage capacity is under construction with the financial assistance of the World Bank and under the FCI's own programme. In addition it has hired storage accommodation of about 85 lakh tonnes.

The Corporation has 25 modern rice mills in various states. Its solvent extraction plant at Sambanarkoil, Tamil Nadu manufactures edible and industrial grade oil from rice bran. A *dal* mill has also been set up at Lucknow.

PUBLIC DISTRIBUTION

The public distribution system functioning through a wide-net work of fair price|ration shops aims primarily at supplying foodgrains to the consumers, particularly the vulnerable sections of the population at reasonable prices. The total distribution of foodgrains, which stood as high as 149.9 lakh tonnes in 1980, came down to 130.1 lakh tonnes in 1981 due mainly to easy availability following the good crop of 1980-81. However, during 1982, in order to contain pressure on market prices caused by the failure of monsoons in some parts of the country, the public distribution rose to 147.7 lakh tonnes, or 13.5 per cent higher than in 1981.

During 1983, the total distribution of foodgrains showed further upward trend due to drought conditions prevailing in the country during the early part of the year. A record quantity of 162.3 lakh tonnes of foodgrains have been distributed in 1983 as against 147.7 lakh tonnes or 9.9 per cent higher than that distributed during the preceding year.

Buffer Stock

The building up and maintenance of buffer stocks have been important planks of the national food policy. These stocks are maintained primarily to ensure stability in supplies and prices over the year.

Government had decided that the size of the buffer stock to be maintained by the public agencies in the country should be 100 lakh tonnes—comprising 50 lakh tonnes of wheat and 50 lakh tonnes of rice. This buffer stock will be over and above the operational stock which on different dates of the year would range between the lowest figure of 65 lakh tonnes on 1 April and the highest figure of 114 lakh tonnes on 1 July.

Import of Foodgrains

With a view to replenishing buffer stocks as a measure of national food security and keeping a check on prices of foodgrains a quantity of 21.30 lakh tonnes of wheat was contracted for import, comprising 5 lakh tonnes from Canada, 6.5 lakh tonnes from Argentina, and 9.8 lakh tonnes from USA during 1983. Also, a quantity of 3.7 lakh tonnes of rice was contracted for import, comprising 1.7 lakh tonnes from Thailand and 2 lakh tonnes from Burma. Against these import contracts entered into in 1983, a quantity of 3.33 lakh tonnes of wheat and 2.97 lakh tonnes of rice was received in India upto 31 December 1983. In addition, a quantity of 34.75 lakh tonnes of US wheat was also received in 1983 against contracts entered into in 1982.

Export of Foodgrains

During 1983, export of *basmati* rice continued to be on open general licence. Export of non-*basmati* rice and wheat continued to be banned during the year, except for small quantities on government to government commitments made in the preceding year or to assist friendly neighbouring countries to tide over their difficulties.

Storage

The Food Corporation of India (FCI) and the Central Warehousing Corporation (CWC) provide storage at the centres of all-India importance; the state warehousing corporations and the state governments at the centres of state importance and the district level; and the co-operatives at the primary and marketing society level in rural areas. A scheme has also been initiated for establishing a national grid of rural godowns for agricultural produce in the rural areas.

The Central Warehousing Corporation acquires and builds godowns and warehouses for storage of agricultural produce, inputs, agricultural implements and notified commodities.

The storage capacity with the Corporation as on 31 December 1983 was 45.38 lakh tonnes (29.42 lakh tonnes owned and 15.96 lakh tonnes hired). Besides, the Corporation has custom bonded warehouses in Delhi, Patna, Calcutta, Ahmadabad, Bhopal, Hyderabad, Madras, Lucknow, Chandigarh, Bangalore and Bombay regions to enable exporters/importers to keep the commodities in good conditions pending shipment.

Quality Control

The Storage and Research Division is responsible for formulation of uniform specifications for procurement of foodgrains all over the country and also to deal with policy matters in respect of technical aspects for import and export of foodgrains and also to render advice to Food Corporation of India, state governments and other agencies connected with the storage of foodgrains in respect of preservation and quality aspect. For this purpose, the Central Grain Analysis Laboratory undertakes analysis of the consignment samples of imported and indigenously procured foodgrains and their products. Three quality control cells have been created at New Delhi, Calcutta and Hyderabad, to monitor the quality of foodgrains.

Save Grain Campaign

Since the post-harvest losses at the farm and community levels are known to be substantial due to faulty and improper methods of storage, the Government is tackling the problem through the Save Grain Campaign. The scheme aims at providing the appropriate technology through education, motivation and persuasion in preventing the losses and improving the farm and community level storage. Simple but effective methods of foodgrains storage and pest control are being popularised. Improved type of metal bins and pesticides are supplied.

The activities of the Save Grain Campaign are being undertaken by a net work of 17 regional teams of technical staff. They are supported by the Indian Grain Storage Institute, Hapur, and its field stations at Hyderabad, Ludhiana, Jabalpur, Jorhat and Udaipur.

NUTRITION

The Food & Nutrition Board set up in 1964 in the Department of Food has been concentrating its efforts on the development of nutritious foods and promotion of their production and dissemination of the knowledge on nutrition through education and extension activities.

The production of miltone, a protein isolate toned milk, based on groundnut, was 35.15 lakh litres during 1983 at Bangalore, Hyderabad, Ranchi and Calcutta. The Calcutta unit for production of miltone was commissioned on 2 November 1983. Production of energy|extruded| weaning foods was also continued. Under the fortification scheme, the entire milk being produced at Mother Dairy, Delhi which is about 5.4

lakh litres a day is being fortified with Vitamin A to enhance its value Efforts are underway to fortify milk with Vitamin A at Delhi Milk Scheme, Delhi and Mother Dairy, Calcutta. The Department had undertaken a project for developing technology for iron fortification of salt with a view to combating anaemia. A suitable iron formula for production of iron fortified salt was developed and large scale field trials were conducted which were successful. A fleet of 31 mobile food and nutrition extension units disseminates knowledge on nutrition, scientific methods of cooking, principles of food hygiene and sanitation, and promotion of suitable dietary habits. The Food and Nutrition Board has been organising a Nutrition Week in the first week of May since 1982.

A bold initiative has been taken in establishing the North-Eastern Regional Agricultural Marketing Corporation Ltd. (NERAMCL), with headquarters at Guwahati, to enable growers of fruits and vegetables to secure better prices of their produce and to help in accelerating the process of economic development in the region. The Corporation would procure marketable surplus in fruits and vegetables produced in north-eastern region and undertake their processing and marketing.

A Fruit Juice Bottling Plant went into production in April 1982 under the aegis of the Modern Food Industries (I) Ltd. (formerly Modern Bakeries). The Plant is producing and marketing apple juice, mango and guava drinks in Delhi, under the brand name *Rasika*. The Modern Food Industries (I) Ltd. is also setting up a pine apple processing plant in Assam and a fruit processing plant in Bihar.

Thirty three Community Canning and Preservation Centres are engaged in popularisation of fruit and vegetable preservation methods by offering training to housewives. The Centres also provide processing facilities for fruits and vegetables for domestic consumption. The Department also has a consultancy cell, which offers professional services for preparation and appraisal of techno-economic feasibility reports for setting up fruit and vegetable processing units.

Under modernisation of rice milling industry, a new scheme for modernisation of hullers is being implemented in Andhra Pradesh, Tamil Nadu and Uttar Pradesh. The scheme provides for supplying modern rice milling machinery to huller owners on subsidy, setting up of demonstration units and holding seminars on the subject.

FERTILIZERS

Fertilizer is the kingpin for increasing productivity in agriculture. For every tonne of nutrient put into the soil, there is an increase of 8 to 10 tonnes of foodgrains, other things remaining equal. It has been estimated that about 70 per cent of the growth in agricultural production can be attributed to increased fertilizer use. The increase in consumption of fertilizer over a year would thus be a good indicator of the country's performance in the field of agriculture. India ranks fourth in the world in terms of gross fertilizer consumption after USA, USSR and China. The per unit area consumption of fertilizer in India, however, is still very low and ranks among the bottom half of the countries in this regard. The total fertilizer consumption has gone up from 69 thousand tonnes of nutrients in 1950-51 to about 63.9 lakh tonnes in 1982-83.

Inspite of the rather indifferent weather in the last couple of years, the increase in consumption of fertilizer has been maintained at an appreciable level. During 1983-84 the weather having turned favourable and also the prices having been reduced by 7.5 per cent, th consumption is expected to grow at a higher rate and the target of 7 lakh tonnes of nutrient is expected to be exceeded. The estimate consumption of fertilizer in *kharif* 1983 (April-September) is 32.8 lakh tonnes as against 28.05 lakh tonnes in the same period in th previous year. The availability of fertilizers during 1983-84 has bee by and large satisfactory and the excellent increase in demand has bee met by ensuring adequate imports of fertilizers.

Organic Recycling

In the context of improving soil fertility, conservation of organic resources and increasing the efficiency of chemical fertilizer, the programme of organic recycling in conjunction with chemical fertilizer, i being given added attention. The programmes like rural compostin urban composting, green manuring, sewage|sullage utilisation and biogas slurry, etc., are being implemented in the state sector. Considering bio-fertilizer as a cheap and renewable manurial resource, the Ministry of Agriculture is implementing a national project on development and use of bio-fertilizer. Under the project, one national bio-fertilizer centre, six regional bio-fertilizer development centres to produce Rhizobium cultures and 40 sub-centres for production of Blue Green Algae are being established. Twenty one such sub-centres have already been approved in different parts of the country and locations of remaining 19 centres are being identified.

SEEDS

Government set up in 1963 the National Seeds Corporation for production and distribution of quality seeds. In 1969, the State Farms Corporation of India was also set up for developing large sized mechanised farms on modern lines, mainly for production of seeds. With the launching of national seeds programme in 1976, with the aid of World Bank, seed production and distribution were decentralised and state seeds corporations were set up in Andhra Pradesh, Bihar, Haryana, Karnataka, Maharashtra, Orissa, Punjab, Rajasthan and Uttar Pradesh. A net-work of seed certification agencies and seed testing laboratories also functions throughout the country for regulating the quality standards of seeds. It is estimated that the quantum of seeds to be distributed during 1983-84 would be about 31 times of the level of 1953-54.

After the evolution of new genetic material, the seed production cycle consists of three stages, *viz,* breeder seed, foundation seed and finally the certified seed which is made available to farmers for planting purposes. Prior to 1982-83, breeder seeds were being produced mainly by research institutions and agricultural universities but now, the Government have taken the initiative for augmenting the sources of supply of these seeds. The National Seeds Corporation and the State Farms Corporation of India have been entrusted with the responsibility for producing breeder seeds. The NSC will set up four farms exclusively for production of breeder seeds with assistance from the Government. The Government provides financial assistance to agriculture universities and to the NSC for production of foundation seeds.

National Seeds Programme

A planned effort for strengthening and expanding infrastructure for production and distribution of certified seeds is being made in the national seeds programme, which visualises an investment of Rs 89.42 crore out of which, World Bank aid is to the tune of US $ 41 million. Under this programme, eight Centres for processing|packing of vegetable seeds have been commissioned. Nine processing plants for certified seeds have been set up and 13 more are in advance stages of completion. For processing of foundation seeds, agricultural universities are to set up 11 processing plants out of which 7 have been commissioned. Storage capacity for seeds is being created to the tune of 2.2 lakh quintals in 26 transit stores of which eleven have been completed.

Quality Control

Adequate provisions for ensuring quality of seeds have been made in the Seeds Act, 1966 and in the rules framed thereunder. Necessary powers for enforcing the quality control measures have been delegated to the state governments. In 1983, seeds were declared as essential commodity under the Essential Commodities Act and a Seed (Control) Order was passed to provide for compulsory registration of seed dealers. The seed testing laboratories and seed certification agencies functioning in states are made responsible for checking and certifying the quality of seeds.

The agricultural universities and the Indian Council of Agricultural Research are engaged in evolving new varieties of seeds, having greater resistence against pests and other diseases and having shorter growth durations. During 1983-84, 19 new varieties were recommended for multiplication in different states and notifications were issued to bring 41 more varieties under the purview of quality control arrangements of the Seeds Act.

Exports

Exports of seeds are allowed only subject to exigencies of domestic requirements. Exports of breeder and foundation seeds as also seeds of oilseeds and pulses are banned. Certified seeds of foodgrains have been put on restricted list. However, in the interest of international relations about 27,104 quintals of seeds of wheat, potato, *bajra* and sorghum were exported during 1983-84, mostly by the NSC.

National Seeds Corporation

The National Seeds Corporation is an apex organisation in the seed sector in India. Their production of certified seeds during 1983-84 is expected to be of the order of 8.08 lakh quintals against the achievement of 5.70 lakh quintals during 1982-83.

State Farms Corporation of India

The State Farms Corporation of India manages 12 large size mechanised farms with an area of 36,619 hectares. The activities apart from seed production, include implementation of a scheme for distribution of planting material of outstanding varieties of horticultural crops and running a developmental farm in Mizoram where local farmers are trained in latest agricultural techniques.

PLANT PROTECTION

The importance of plant protection in increasing agricultural production has come to be recognised during the last two decades, particularly after the introduction of high yielding varieties of crops. Government is taking all steps necessary to prevent losses in production through any agent whatsoever. Timely detection of pests and diseases through surveillance and judicious use of pesticides in conjunction with other agricultural practices like use of biological, cultural and genetic engineering, are some of the methods through which this is achieved.

Ground and aerial operations are launched for locust control b Central Locust Warning Organisation in collaboration with the con cerned state governments. The Satellite Laboratory for Remot Sensing and Locust Breeding Grounds, Jodhpur, collects ground dat for analysis. The Field Station for Investigation on Locust, Bikaner carries out experiments on the ecology, biology and behaviour of desert and other locust species apart from arid zone grasshoppers.

Roving survey work for monitoring the pest and disease situation is being carried out by 19 Central Surveillance Stations and 13 Central Plant Protection Stations. These surveys, forewarn about the build up, out-break of pests and diseases to enable the state governments to take up timely control operations.

Under the Revised 20-Point Programme, field stations of the Directorate of Plant Protection, Quarantine and Storage has adopted 175 villages, for transfer of plant protection technology.

Eleven Central Biological Control Stations conduct surveys for testing the natural enemies of identified insects on major crops. One Parasite Multiplication Laboratory has been set up at Bangalore.

There are 29 Plant Quarantine and Fumigation Stations located at sea-ports—10 at airports and 10 at land frontiers areas. These stations screen seeds, plant and planting material for the presence of insect pests and diseases.

Central assistance is extended to state governments/union territory administrations under the Centrally sponsored scheme for control and eradication of pests and diseases of agricultural importance.

The Central Insecticides Laboratory has been created in the Directorate of Plant Protection Quarantine and Storage. The Central Plant Protection Training Institute, Hyderabad organises special training for the officers engaged in this work.

The country manufactures some 45 pesticides including eight most commonly used pesticides like BHC, DDT, Malathion, Fenitrothion, Methyl Parathion, Dimethoate, Carbaryl and Endosulphan.

Demand for various pesticides has been estimated at 72,000 tonnes for 1983-84.

AGRICULTURAL IMPLEMENTS

In 1983-84 a new thrust has been given to the programme of popularisation of improved animal drawn implements and hand tools. Against targets indicated by the Ministry of Agriculture, over 25,000 seed-cum-fertilizer drills and 3 lakh other implements have been distributed by the state governments.

A new centrally sponsored scheme for intensive demonstration and popularisation of improved animal drawn implements has been sanctioned during the year with a total outlay of Rs 11.35 crore. Implementation of the scheme will spill over to the Seventh Plan. The scheme envisages intensive demonstration of improved implements and establishment of agro service centres at the rate of 2 centres per block in 600 blocks in 9 states. A subsidy is being provided to encourage the sale of improved implements. The subsidy component will be implemented in an additional 300 blocks in the remaining states/union territories.

Farm Machinery Institutes

The Department runs Farm Machinery Training and Testing Institutes at Budni, Hisar and Garladinne in Anantapur district of Andhra Pradesh for providing training to farmers, mechanics, etc., in the selection, operation and maintenance of farm machinery. The Institutes are engaged in testing of tractors and other agricultural machinery as a service to manufacturers and users.

Agro Industries Corporations

There are 17 State Agro-Industries Corporations which are engaged in providing a large range of inputs and services to the farming community and in setting up of agro-based industries.

SOIL AND WATER CONSERVATION

Soil and water conservation programmes are taken in the context of national plan strategy to make the country self-reliant in food and other land based produces as well as to generate additional employment opportunities and income in rural areas. About 17.5 crore hectare comprising 53 per cent of the country's geographical area is subject to soil erosion and degradation through various means.

The programme for protection, conservation and development of land was launched in the First Plan. Soil and water conservation programmes have been taken as an integral part of land use planning combining conservation strategy with socio-economic objectives. The programmes are aimed at providing corrective or additive elements to ensure continued and improved productivity of land and harmonious inter-action between land cycle and water cycle by appropriate management of land surfaces.

The strategy for planning and implementing these programmes is 'watershed management' which ensures protecting the available resource base against ecological hazards and incorporate measures to exploit climatic and physiographic attributes of the given watershed to maximise the productivity.

The Centrally sponsored programmes for the catchments of river valley projects and flood prone rivers are in operation in about 700 priority watersheds. The concept of watershed management has been accepted for development of land and soil resource base for improved dryland farming as well as for betterment of economic level of small and marginal farmers. Under the two Centrally sponsored schemes, about 5,000 micro watersheds have been put in operation. Catchment delineation works and *inter se* priority fixation have been adopted by various states on the basis of either erosion hazards or in consideration of the needs of development of rainfed areas. In all cases, the broad planning at regional and divisional level is being done on the basis of watersheds with areas around 2,000 to 5,000 hectares while actual implementation programmes are being planned, designed and implemented on the basis of micro watershed with areas as small as 50 hectares even.

The programme components include: (1) implementing field measures such as terracing, contour farming, inter-cropping, etc., for controlling runoff and erosion, (2) raising wind breaks, shelter belts to check wind erosion project crops from hot and fast winds and fixing sand dunes, (3) land levelling and shaping, (4) afforestation and raising of utility trees such as *Agaf Sisliana,* cashew, *mahuwa,* jack fruits, etc., and (5) putting up erosion control and water harvesting structures with a view to restore degraded lands, create micro level irrigation potential and closures with working of soil conservation measures for development of grassland.

With a view to prevent premature siltation of multi-purpose reservoirs which have been constructed at high investment, India has been implementing a programme of integrated watershed management in

28 catchments under different soil conservation regions. The scheme has got inbuilt facilities for collecting silt load data alongwith watershed Characteristics from small watersheds and tributaries. By 1983-84 an area of 18.4 lakh hectares is likely to be treated at a total investment of Rs 159.99 crore.

A Centrally sponsored scheme of integrated watershed management was also launched during the Sixth Plan in the catchments of 8 flood prone rivers of Gangetic basin lying in 7 states and one union territory. The scheme aims at enhancing the ability of the catchment for absorbing greater part of the rain water, reducing erosion and consequent silt load in the stream and river flows.

The All India Soil & Land Use Survey Organisation has been carrying out works of delineation and codification of catchments into watersheds, fixation of *inter se* priorities of the watersheds, determination of hydrologic soil groups, infiltration characteristics, potential and problems of various identified soil series, etc. The organisation has steadily built up its capability in terms of equipment, trained personnel and methodology for using soft wares, which are being made available through remote sensing technology, in collaboration with the Department of Space and in addition to toposheets, cadastral maps and aerial photos. Till 1983-84 the Organisation will be covering 552.8 lakh hectares by reconnaisance and priority delineation surveys, 73.2 lakh hectares by detailed soil surveys and 5,112 blocks (each of 64 hectares) by sample soil surveys in 20 districts. It has identified 3,772 watersheds in the category of very high and high priority category for immediate planning and implementation of watershed management plans, determined hydrologic soil groups and infiltration characteristics for 445 and 75 soil series respectively. In all 274 reports have been brought out.

It is recognised that in the years to come, additional area will be needed to put under crop and plant management for meeting increasing demand for various land-based produces. To start with, culturable waste lands (169.5 lakh hectares) and fallows other than current fallows (95.5 lakh hectares) seems to be the types of lands which need to be brought under more productive plant management practices. Therefore, during 1982-83, a programme for restoration of long fallows was launched in eight states, namely, Andhra Pradesh, Bihar, Karnataka, Madhya Pradesh, Maharashtra, Rajasthan, Tamil Nadu and Uttar Pradesh, which account for 80 lakh hectares of such lands. Against the target of 4.04 lakh hectare, an area of 3.83 lakh hectare was brought under productive plant land management practices through cultivation, raising of utility trees, development of orchards and grasslands and afforestation with various controllable measures wherever necessary. The programme was extended in 1983-84 to another four states, namely, Assam, Meghalaya, Orissa and West Bengal, envisaging a total target of 4.3 lakh hectare. On the basis of progress reports received till February 1984, an area of 3.16 lakh hectare has already been treated.

As scientific management of the land and soil profile has become essential, states have been urged to set up State Land Use Boards to provide policy co-ordination among various line departments and formulating and implementing appropriate programmes for care of land and soil profile as well as their scientific management. To coordinate and oversee the activities of all the State Land Use Boards, a tow-tier body, namely, National Land Resources Conservation and Development Commission, and a National Land Board have been set up.

For effective implementation of the conservation programme, 14 states and two union territories have enacted Soil Conservation Acts. Similarly, to arrest extensive and indiscriminate felling of forests, Forest Conservation Act was passed in 1980 to ensure that no forest land can be denuded or diverted for non-forest uses without prior approval.

Dry land/Rainfed Farming

Agricultural development in India so far had been made only towards the irrigated areas whereas the vast dryland|rainfed areas which account for about 75 per cent of net cultivated area still remain neglected. These areas contribute about 42 per cent to total foodgrains production. The growth in production and productivity of important rainfed crops has been much slower resulting in decrease of per capita availability of pulses and edible oils which are the main crops grown in the dryland areas. As such, the development of agriculture in India has now reached a stage when more reliance has to be placed on dryland|rainfed areas for national food security, correction of regional and nutritional imbalances and generation of widespread rural employment in the hinterlands. The inclusion of the development of dryland farming in Revised 20-Point Programme reflects Government's keen interest to correct the regional and nutritional imbalance on top priority basis through stepping up production and productivity in rainfed areas.

Crop production under the rainfed conditions is marked by erratic and unpredicable rainfall pattern creating an atmosphere of high risk and insecurity. This stops the dryland farmers from investing in inputs like seed, fertilizers, plant protection measures, etc. Dryland farming is being practised in over 10.5 crore hectares out of 14.3 crore hectares of the total cropped land in the country. Bulk of nutritionally vital crops like pulses and oilseeds, large portion of industrially important crops like cotton and groundnut and staple food like *jowar, bajra*, maize, etc., are cultivated under rainfed conditions.

Development of watershed, which is a geohydrological unit or a piece of land that drains at a common point has been accepted as a national approach and strategy for development of dryland areas. Government had suggested to states|union territories to make all-out efforts for boosting up of the production levels in these areas.

Many states and union territories have identified 4,246 micro-watersheds for comprehensive and systematic development. Each micro-watershed will cover an area of about 1,000 hectare and the programme contents include scientific management of rain water, land development, plantation of forest and trees, development of animal husbandry and allied activities.

Forty six model watersheds have been identified for developing as focal points jointly by Central and state governments|ICAR research institutes|agricultural universities and watershed community. These watershed will test the technology and train the field workers.

Another central sector scheme is taken up for development of dryland farming technology based primarily on water harvesting structures for providing life saving irrigation particularly during dry spell and early withdrawals of monsoon in September-October. The objective is to elevate and stabilise production in rainfed areas through scientific development and management of watersheds. The schem is being taken up in 19 districts of 15 states with Central assistance.

A pilot project for watershed development in rainfed areas ha been taken up with the assistance of World Bank. The project envi sages the development of identified watersheds of about 25,000-30,00 hectare area in Madhya Pradesh, Maharashtra, Andhra Pradesh an Karnataka. The project has been initiated at field level.

In order to lay basis for sound investment on large scale (a) t reverse man-made ecological degradation that has been going on in th lower foothills of Himalayas for decades and (b) to project an develop agricultural land which is presently subject to serious erosion and flooding, a comprehensive project namely *Kandi* watershe and area development project has been launched in Punjab with th assistance of World Bank at a total cost of Rs 51.05 crore. O completion the project will benefit not only the farmers of project are but will serve as a model for whole of the *Kandi* track in the country

DEVELOPMENT PROGRAMMES

The strategy for agricultural development includes *inter alia* the cultivation of high-yielding varieties over larger areas; development o irrigation facilities, particularly exploitation of ground water resources adequate and balanced use of fertilizers: adoption of need-based plan protection measures; and a well-organised and systematic supply o inputs, including credit through institutional and other financing agencies. In addition, efforts have been made to bring science and technology closer to the farmers through education and training and strengthened extension set-up. Special emphasis is being laid o programmes for the uplift of the weaker sections of rural population

High Yielding Varieties Programme

High yielding varieties programme is the major plank of agricultura strategy for increasing production of foodgrains in the country. Th coverage of area under this programme increased from 18.9 lak hectares in 1966-67, the year of introduction of this programme, t 84.75 crore hectares in 1982-83. The coverage during 1983-84 i estimated at 5.25 crore hectares and the target fixed for 1984-85 i 5.6 crore hectares. The crop-wise details are given in table 14.2.

TABLE 14.2
AREA UNDER HIGH YIELDING VARIETIES PROGRAMME

(in lakh hectare)

Crops	1966-67	1982-83	1983-84 Anticipated	1984-85 Target
Paddy	8·9	188·4	221·8	250·0
Wheat	5·4	178·4	185·5	190·0
Jowar	1·9	43·7	48·4	50·0
Bajra	0·6	47·1	51·1	50·0
Maize	2·1	17·2	18·1	20·0
Total	18·9	474·8	524·9	560·0

The introduction of high yielding programme has revolutionalise Indian agriculture and brought about a phenomenal and rapid increas in foodgrains production in the country. The total foodgrains production has increased from 7.23 crore tonnes in 1965-66 before introduction of the high yielding varieties programme to 13.33 crore tonne in 1981-82.

Among the various crops included under the programme, high yielding varieties have brought about a spectacular success in wheat production. The total wheat output which stood at 103.9 lakh tonnes in 1965-66 reached a record level of 355 lakh tonnes in 1978-79 which further improved to 363 lakh tonnes in 1980-81, 374 lakh tonnes in 1981-82 and 425 lakh tonnes in 1982-83. A noteworthy aspect of the introduction of high yielding varieties programme is the gradual spread of wheat cultivation in hitherto predominantly rice growing areas.

The production of rice took a spurt after the introduction of high yielding varieties programme coupled with related essential inputs. The production of rice increased from 306 lakh tonnes in 1965-66 to 538 lakh tonnes in 1978-79. A remarkable change that has taken place in the country is the cultivation of rice on a large scale in non-rice consuming states such as Punjab and Haryana during *kharif* season and the cultivation of summer rice in the eastern and southern states.

The progress in respect of coarse grains has, however, not been as fast as in the case of wheat and rice mainly because the farmers have not generally responded to the high yielding technology on the same scale as in case of latter.

The high yielding varieties programme is being supported by the central sector scheme of establishment of community nurseries of rice and minikits demonstration programme.

The scheme of establishment of community nurseries of rice is an important part of the development effort for increasing production of rice in India. This was initiated in 1974-75 in the canal command areas of Bihar. Under this scheme, community nurseries of rice are raised at government farms and on tubewell points of farmers for raising seedlings not only for their own use but also for sharing with other farmers of the area, who do not possess irrigation facilities, at a nominal cost. A subsidy of Rs 1,500 per hectare is being provided by the government to meet part of the cost of inputs.

From an area of 180 hectares covered under this scheme in 1974-75, the community nurseries were raised over 25,000 hectares in 1982-83 for which the Government provided financial assistance of Rs 3.75 crore. This also included raising of nurseries over an area of 3,000 hectares in the cyclone affected regions of Orissa.

The practice of raising community nurseries of rice not only gives sufficient time for the proper growth of paddy crop, but also enables the farmers to grow a second crop of wheat after harvesting paddy. This practice helps in the spread of technology, automatic spread of high yielding varieties and ensures minimum plant protection to the nursery followed by a fair level of protection to the early planned crop thereby promoting early establishment and rapid tillering.

The scheme of community nurseries has acquired considerable importance. The target for establishment of community nurseries has been fixed at 22,000 hectares for 1983-84 for which the Government has provided subsidy of Rs 330 lakh.

The main purpose of minikits demonstration programme is the demonstration of superiority of the new varieties of crops so that these are adopted at a faster pace. Under this programme, minikits containing small quantities of seeds of different high-yielding varieties/hybrids are supplied to the farmers free of cost for demonstration on the fields.

This programme was initiated during *rabi*/summer season of 1971-72 in the case of rice and was subsequently extended to other crops *viz.*, wheat, barley, *jowar, bajra,* maize and ragi in 1974-75. Since then lakhs of minikits containing seed of high yielding varieties hybrids have been distributed among the farmers who have benefited by this programme. The programme was intensified during 1982-83 as a part of the action plan for the Productivity Year and as many as 16.01 lakh minikits containing seed of high yielding varieties of rice and wheat and hybrids of *jowar, bajra,* maize and ragi were distributed free of cost among farmers for demonstration purposes. The target for 1984-85 is to distribute 13 lakh minikits.

Pulses

The country has the largest area in the world under pulses crops. They constitute a group of crops of the leguminasae family and as such play an important role in maintaining soil fertility. Being rich in protein, they form a vital part of the diet of the people.

Traditionally, the farmers grow pulses not as a principal but as a bonus crop on marginal and unirrigated lands. Still these crops occupy a permanent place in the agricultural economy as it survives under conditions of moisture stress and fix nitrogen from the atmosphere.

Special efforts are being made to increase the production of pulses under the Revised 20-Point Programme. The strategy being adopted is: (1) introduction of pulses crops in irrigated farming system; (2) bringing additional area under short duration varieties of *moong* and *urd* in summer season with irrigation and in rice fallows by utilising the residual moisture in *rabi* season; (3) inter-cropping of *arhar* in soyabean, *bajra,* cotton, sugarcane and groundnut, both under irrigated and unirrigated conditions; (4) multiplication and use of improved pulses seeds, use of phosphatic fertilizers and rhizobium culture and adoption of plant protection measures; (5) improved post-harvest technology; and (6) price support.

The scheme provides financial assistance to the farmers by way of subsidies on certified/truthfully labelled seed, plant protection chemicals/equipments, operational charges and production and distribution of rhizobium culture as well as irrigation charges for summer *moong* production. In addition, assistance is also provided to the state governments for laying out demonstrations and production of breeder/foundation seed so as to motivate the farmers to adopt the improved package of practices.

As a result of special emphasis being laid on pulses since 1980-81 and measures being made under the Centrally sponsored scheme, the production of pulses touched a level of 115 lakh tonnes during 1981-82 as against 106.3 lakh tonnes in 1980-81 and 85.7 lakh tonnes in 1979-80. During 1982-83, pulses production has maintained its upward trend and was estimated at 116 lakh tonnes in spite of decline in area from 238 lakh hectares in 1981-82 to 224 lakh hectares in 1982-83 due to droughts and floods in some of the major pulses growing states.

The cultivation of *moong* in summer season has recently gained popularity in majority of the states. In 1981, this programme was introduced in the northern zone, to be adopted by the farmers, after the harvest of *rabi* crops under assured irrigated conditions. Howeve with the inclusion of the new element of subsidy on irrigation in 1982-83, besides other components, the programme has caught on in the central, southern and eastern states also.

Non-availability of good quality seeds of improved varieties is one of the major constraints in pulses production. Subsidy of Rs 200 per quintal was provided for distribution of 21,003 quintals of certified seed of gram to the gram growing states during 1983-84 as against 12,175 quintals distributed during 1982-83.

For quick spread of improved short duration varieties of pulses and larger area coverage, a Central sector scheme on minikit demonstration has been initiated from 1981-82. Minikits totalling to 4.45 lakh were distributed during 1983-84 as against 4.01 lakh during 1982-83. Besides more than 8 lakh pulses minikits were distributed under the Centrally sponsored scheme for assistance to small and marginal farmers.

A Central sector scheme for production of quality seeds and training is also in operation. Under this scheme, funds are provided for multiplication of breeder seeds of improved short duration varieties of all-India importance. Funds have also been provided for training of extension staff in improved package of practices who in turn transfer the technology to the farmers.

Oilseeds

Oilseeds are cultivated over an area of about 191 lakh hectares in India. This is contributed by nine major oilseeds, namely, groundnut rapeseed, mustard, sesame, safflower, niger, soyabean, sunflower, linseed and castor.

Both area and production of oilseeds crops have been increasing. The area has increased from an average area of 164.96 lakh hectares in 1969-74 to 185.87 lakh hectares in 1980-83 *i.e.* by about 12.7 per cent. In the same period, the production has increased by about 23.9 per cent from 86.42 lakh tonnes in 1969–74 to 107.06 lakh tonnes in 1980-83 (with an anticipated production of 125 lakh tonnes in 1983, the average production of 1980–84 would be 111.55 lakh tonnes *i.e.* 29.1 per cent higher than in 1969–74).

In view of the high priority given to oilseeds development programme in the agricultural production programme, the following strategy has been adopted : (1) adoption of improved package of practices on a large scale, (2) extension of area, (3) greater emphasis on the development of non-traditional oilseeds like soyabean and sunflower, (4) increased use of quality seeds, phosphatic fertilizers and plant protection measures, (5) increase in the area under irrigated oilseeds, (6) launching of special projects in potential areas, and (7) organisation on composite demonstrations, use of large number of minikits and intercropping.

To supplement the production of edible oils, commercial cultivation of soyabean and sunflower was introduced during 1971-72 and 1972-73 respectively, under the Centrally sponsored schemes. Based on this approach the schemes implemented during the Fifth Plan were (1) intensive oilseeds development programme, (2) extension of oilseeds to new irrigated areas, (3) development of sunflower, and (4) development of soyabean.

A production target of 130 lakh tonnes of oilseeds has been fixed for achievement in the terminal year of the Sixth Plan, on the basis of trendline estimates of production of 101 lakh tonnes. This involves an additional production of 29 lakh tonnes. With a view to raising the production of oilseeds to the targetted level of 130 lakh tonnes, the above programmes have been reoriented and strengthened. The total outlay on account of the share of the Government on these programmes has been raised to Rs 65 crore in the Sixth Plan from Rs 14 cror in the Fifth Plan.

The need for accelerating the efforts for oilseeds development i the country has gained further importance with the inclusion of these crops in the Revised 20-Point Programme. It has been recognise that besides making efforts for raising the production of these crops in potential areas, concentrated attention has to be focussed on the development of some very important crops in most potential areas. It has been identified that the development of groundnut in Gujarat, particularly in Saurashtra region, and soyabean in Madhya Pradesh, would go a long way in raising total production of oilseeds in the country. Accordingly, two special projects *i.e.*, one for intensive development of groundnut in Gujarat and the other five-year soyabean project in Madhya Pradesh have been sanctioned by the Government at a cost of Rs 35 crore and Rs 15 crore respectively to be met in full by the Central Government. The groundnut project in Gujarat aims at raising the production of groundnut to 27 lakh tonnes in 1983-84 from 18 lakh tonnes in 1980-81. Similarly, the soyabean project in Madhya Pradesh aims at expanding the area under soyabean to 18 lakh hectares in 1985-86 from 4.5 lakh hectares in 1980-81.

A National Oilseeds Development Project, reorienting and integrating the existing oilseeds development schemes and special projects, has been sanctioned for 1984-85 at a total cost of Rs 38 crore to be met in full by the Government. Location-specific and concentrated area-approach through the special project, has been extended to four crops, namely, groundnut, rapeseed-mustard, soyabean and sunflower in 12 states. The intensive approach has also been extended to more areas and crops, namely, safflower, niger and sesame besides groundnut, rapeseed-mustard, soyabean and sunflower. Thus the programmes have been strengthened significantly and the total Sixth Plan outlay of Rs 65 crore is proposed to be raised by another Rs 38 crore through the implementation of the National Oilseeds Development Project during 1984-85.

HORTICULTURE

The development of horticulture has the importance not only for increasing the supply of nutritive foods like fruits and vegetables but also for improving the rural economy by generating employment and income particularly for the small and marginal farmers and the landless agriculturists. Government have decided to set up a National Horticultural Board for integrated development of the horticultural industry. The Board will provide technical and financial assistance to the state governments as well as voluntary and co-operative organisations for horticultural development.

The Central and Centrally sponsored programmes for the development of coconut, cashewnut and spices and for the establishment o elite progeny orchards have been intensified.

Under the package programme of coconut development, th coverage of area is expected to increase from 1.48 lakh hectares i 1982-83 to 1.77 lakh hectares in 1983-84. The Coconut Development Board, set up in 1980-81, has so far sanctioned 7 projects t cover area expansion, production of hybrid seed nuts and seedlings establishment of Coconut Technology Centre, etc.

For increasing the production of cashewnut which is one of the important foreign exchange earning crops of India, a World Bank-aided multi-state cashewnut project with an outlay of Rs 38.36 crore, is under implementation in Kerala, Karnataka, Andhra Pradesh and Orissa. An area of 52,775 hectares is expected to be brought under new plantations under this project. Besides, an area of 7,500 hectares of the existing plantations will be covered under the improvement programme. Under the Centrally sponsored package programme for cashewnut development, about 2,120 demonstrations were laid out in Kerala, Karnataka, Andhra Pradesh, Tamil Nadu, Orissa, West Bengal and Goa during 1983-84. The other important activities under this programme include establishment of progeny orchards and raising of new plantations.

A new Centrally sponsored scheme on improved technology for quality apple production has been taken up from 1983-84 in Himachal Pradesh, Jammu and Kashmir and Uttar Pradesh.

ANIMAL HUSBANDRY

Cattle and Buffalo

India possesses very good breeds of tropical cattle and best milch breeds of buffaloes in the world, including milch cattle like Gir and purpose (milk and draught) cattle like Tharparkar and Kankraj, milch buffaloes like Murrah and Surti. The draught cattle like Haryana, Ongole, Khillari and Hallikar found in the country are known for their sturdiness, heat tolerance and disease resistance. The breeding policy adopted for cattle development is grading up of indigenous breeds of cows and buffaloes by selective breeding. Cross-breeding of non-descript cattle with temperate dairy breeds such as Helstain Friesian and Jersey has also been taken up as a major step to enhance milk production potential of non-descript cows.

Major field level cattle development projects are Operation Flood Programme and intensive cattle development projects and key village schemes. Other development programmes include establishment of nucleus breeding herds, maintenance of herd books for important cattle and buffalo breeds and artificial insemination through introduction of frozen semen techniques. Through these projects an integrated approach has been developed to give simultaneous attention to improved breeding, augmentation of feed and fodder resources, effective health cover, extension services and marketing facilities.

Improved breeding facilities are made available to the breedable cattle and buffalo through a net work of over 15,000 Artificial Insemination Centres and 60 Frozen Semen Banks/Frozen Semen Bull Stations. The Central Frozen Semen Production and Training Institute at Hesserghatta near Bangalore which is being strengthened and expanded is engaged in production of quality frozen semen for cattle and buffalo development and training of adequate man power in frozen semen technology.

Fodder

Seven regional stations for forage production and demonstration have been established in different agro-climatic regions in the country by the Government with the objective of achieving quick transfer of technology on all aspects of fodder production, conservation and utilisation and to assist the state agencies in the conduct of their extension programme on scientific lines. Introduction of high yielding varieties of fodder crops has resulted in increased fodder production by the small farmers. Cultivation of *berseem* in winter was unheared of in the Kashmir Valley. A new agro-technology now enables the farmers to utilise his paddy fallows without in any way disturbing paddy cultivation.

Significant breakthrough has been achieved in the production pasture legume seeds for use in grassland development. New spec varieties such as *Stylosanthes hamata, S. Scabra, S. Viscesa,* etc., ha been introduced and large scale seed multiplication undertaken f distribution to the forest departments, areas of drought prone ar programme and other interested agencies.

Improved varieties of fooder seeds are being multiplied at the Ce tral Fodder Seed Production Farm, Hessarghatta. Through rigoro selection a high yielding variety of fooder maize has been evolved whi is capable of high seed yield as well. The production of foundatio certified seeds of the recommended high yielding varieties was furth stepped up by the regional stations and the seed farm.

Fooder minikit demonstration programme has been intensified cover all states and union territories and over 24,100 kits we supplied during the *kharif* and *rabi* seasons.

Poultry

Egg production in the country is expected to be maintained arou 1,300 crore eggs during 1984. However, broiler production is e pected to exceed well over 5 crore birds.

The Central Poultry Breeding Farms at Bombay, Bhubaneswar a Hessarghatta have developed high egg producing hybrid strains a the Chandigarh farm fast growing broiler strains and these farms a now supplying parent stock to hatcheries and hybrid chicks to farme

The Central Duck Breeding Farm, Hessarghatta is now supplyi day old ducklings of high egg producing Khaki Campbell breed ducks to various states|union territories.

The Random Sample Test Units at Hessarghatta, Bombay a Bhubaneswar conduct egg laying and broiler tests and provide use information to poultry breeders, hatcheries and farmers on the p formance of various participating stocks available in the country.

The Central Training Institute for Poultry Production and Mana ment, Hessarghatta is imparting training to the officers of states|uni territories|agricultural universities and private sector hatcheries|poul breeding farms in various specialised poultry fields. The Regio Feed Analytical Laboratory, Chandigarh provides feed analyti facilities to farmers and feed manufacturers.

The National Agricultural Co-operative Marketing Federation India Ltd. (NAFED) handles marketing of eggs at national a regional levels.

Slaughter Houses

The country produces around 10 lakh tonnes of meat from vario livestock. With a view to provide clean and wholesome meat human consumption, slaughter houses have been modernised Bombay, Goa and Durgapur. A modern slaughter house is und construction at Madras.

Piggery

There are 82 state pig breeding farms where pure-*exotic* breeds of as well as their crosses are being maintained. With a view to courage scientific pig breeding in these farms, exotic pigs are a imported.

Eight bacon factories have been set up and are operating in Andh Pradesh, Bihar, Punjab, Uttar Pradesh, West Bengal, Kerala, Ma rashtra and Rajasthan. Bacon factories located at Aligarh, Gan varam (Andhra Pradesh), Alwar and Koothatukulam (Kerala) operating as composite meat plants. These bacon factories sup quality pork and pork products to the consumers and also provide encouragement for the production of quality pigs to the pig producers.

Sheep

The total sheep population of India is about 409 lakh (1977), the sixth largest in the world. The average wool yield of the sheep is 800 to 900 gm per head per annum, whereas in other countries sheep like Merionos Rambouillets produce about 4 to 5 kg per year. The total wool production in the country is estimated at 3.6 crore kg (1981-82). Out of this, about 10 per cent is apparel type for fine clothings and the remaining for production of superior carpets, and inferior carpets, *namdas* and army blankets. The total spindlage for utilising apparel wool established in the country is around 25 lakh kg and wool required to run these spindles is 3.5 crore kg (single shift). India imports 1.6 to 1.8 crore kg of fine wool every year at the cost of about Rs 37.5 crore.

The value of woollen carpets produced has risen from Rs 13.28 crore in 1968-69 to Rs 104.9 crore in 1979-80. The total availability of wool for carpet manufacture is about 2 crore kg which is sufficient to meet the current requirement of carpet industry.

To improve the genetic make-up of the sheep, the total requirement of fine wool rams in the country to cover the total breedable ewes is 1.7 lakh. To achieve this, 90 sheep breeding farms and nearly 1,400 extension centres have been opened. These measures have shown some results and the total raw wool production which was only 2.75 crore kg in 1951 has gone up to 3.60 crore kg in 1981-82.

A sheep breeding farm with exotic breed of sheep has been established at Hisar. It has distributed about 5,000 selected exotic/crossbred rams to different states since its establishment. The farm trains officers and shepherds in modern sheep management. To improve the marketing and grading system of wool in the country, five wool boards/sheep corporations have been established by different state governments.

Livestock Health

About 13,900 veterinary hospitals and dispensaries and another 16,500 stockmen/veterinary aid centres are working all over the country. Routine prophylaxis and control against common diseases and ailments are being attended to by these institutions. For producing indigenously the veterinary preventive vaccines, necessary to undertake disease control operations, 18 vaccine production centres have been established in various parts of the country. Together they produce around 3,900 lakh doses of vaccines for the prevention of animal diseases.

The Ministry of Agriculture is establishing 5 regional disease diagnostic laboratories which would provide speedy diagnosis and expert consulation in matters of investigation and diagnosis of obscure and emerging diseases. Further, 14 state disease diagnosis laboratories are being strengthened as Centrally sponsored programme. About 250 disease investigation laboratories function in the state sector.

A national programme for eradicating rinderpest is being implemented throughout the country. The death toll due to this disease has as a result come down from a level of 98 per lakh per year during the midfifties to one per lakh in the current plan period.

DAIRY

There are at present 233 dairy plants in the country in the public and co-operative sectors, comprising 124 liquid milk plants, 36 milk product factories and 73 pilot milk schemes|rural dairies. Against their combined installed capacity of 136 lakh litres a day, the average throughput of milk was 86.5 lakh litres during 1983.

A massive programme of integrated dairy development under Operation Flood II was taken up for implementation in 1979 with an estimated outlay of Rs 485 crore. The major activities taken up include organisation of a three-tier co-operative structure at the producers village, district and state levels, provision of technical inputs and establishing processing capacities and marketing facilities in rural milk sheds through the co-operative structure. Thus, processing and marketing facilities are sought to be created both in the producing belts and the main consumer centres to sub-serve the interest of the producers and the consumers. It made considerable progress during 1983.

Upto the end of December 1983, funds amounting to Rs 191.48 crore were generated by the Indian Dairy Corporation through the sale of gifted commodities as against Rs 162.61 crore by the end of December 1982. The Indian Dairy Corporation incurred an expenditure of Rs 176.51 crore from these funds for furthering the project activities in the different states|union territories.

In the milk sheds, the number of village co-operatives in the ninety-six districts covered, rose to 23,316 with a total membership of 25.2 lakh farmer members, compared to 17,958 societies in December 1982 covering 21.2 lakh members. Of these, 13,451 village societies are marketing nearly 34,167 tonnes of balanced feed per month. About 4,200 societies are providing frozen semen and 2,008 societies are providing liquid semen facilities and have performed artificial insemination on over 5 lakh animals between January-December 1983. Nearly 16,709 villages have been covered under animal health improvement programmes, of which 8,721 societies were provided first aid centres and operated 507 regular|emergency checks to treat the farmers, milch animals at their door step. Approximately, 5,000 milk co-operative societies are being organised every year.

Three integrated cattle-cum-dairy development projects, implemented with the assistance of World Bank are in operation in Rajasthan, Madhya Pradesh and Karnataka.

Indian Dairy Corporation's paper laminating plant at Itola near Vadodara has commenced commercial production with a capacity of 7,650 tonnes per annum. The Corporation's plant for Foot and Mouth Disease Vaccine at Hyderabad has also been commissioned. The plant has a capacity of 250 lakh doses of FMD vaccine.

FISHERIES

Fish production in India has shown an increase from 7.5 lakh tonne in 1950-51 to 23.4 lakh tonnes (14.3 lakh tonnes from marine secto and 9.1 lakh tonnes from inland sector) in 1982-83.

The level of production is likely to increase further considerabl with steps now being taken for the exploitation of deep sea area within the 200 nautical mile Exclusive Economic Zone. The valu of fish produced during 1982-83 was about Rs 1,211 crore. Durin 1982-83, 78,775 tonnes of marine products of value of over Rs 361 crore were exported.

Mechanisation

Mechanised boats have been introduced freely in areas having low density of fishing efforts but these have been restricted in areas havin already large number of fishing boats. The number of mechanise boats increased from 18,135 in 1982-83 to 19,796 in 1983-84. The strength of present commercial deep sea fishing fleet (20 metre in length and above) is 132 consisting of 68 vessels fully owned by Indian companies and 64 vessels on charter. To encourage deep sea fishing the Government has taken a number of measures.

Fishing Harbours

Fishing harbour facilities for fishing crafts are being provided at major and minor ports as well as all along the coast at suitable locations. Fishing harbours of three categories are envisaged by the Government to cater to the fishing vessels starting from traditional country crafts to the deep sea fishing trawlers. Major harbours with a depth of about 6 metre located within the precincts of commercial major ports serve the needs of deep sea fishing vessels. Minor fishing harbours with a draught of about 4 metre spaced at suitable locations along the coast are proposed to serve the needs of large mechanised fleet and medium size deep sea trawlers. Small landing centres are proposed to serve the needs of small fishermen owning traditional crafts or small mechanised boats.

Starting from the beginning of Fourth Plan, a total number of 114 proposals have been sanctioned out of which five are major fishing harbours, twenty five minor fishing harbours and eighty four small landing centres.

Four major fishing harbours at Cochin, Roychowk, Vishakhapatnam and Madras, seven minor fishing harbours at Tuticorin, Mallipatham, Kadiakkarai, Vizhinjam, Karwar, Dhamra and Port Blair and fifty eight landing centres have been completed. The work on one major and 18 minor fishing harbours and 26 small landing centres is in different stages of progress.

Marine Fisheries

The Fishery Survey of India (formerly Exploratory Fisheries Project, Bombay) has been undertaking exploratory survey in the offshore and deep sea waters from 10 bases with the help of 23 trawlers. The vessels are large and equipped for diversified fishing like bottom, mid-water and pelagic trawling, purse-seining, longlining and squid-jigging. The project has completed survey of 90 per cent area within the 40 fathom depth and the results are being made available to the fishing industry. Fishery survey in the deeper water outside 40 fathom has commenced and deep sea prawns and deep sea fishes have been located at the edge of the continental shelf.

Inland Fisheries

India has got vast potential resources in inland fisheries sector. The fish production from this sector increased from 6.9 lakh tonnes in 1971 to about 9.05 lakh tonnes in 1982 and to 10.56 lakh tonnes in 1983-84.

Through the Centrally sponsored programme 108 fish farmers development agencies (FFDA) have been established in the country and 21 more FFDA have been sanctioned. All these FFDA together in the country, have so far brought 40,000 hectare of water areas under scientific fish culture and trained about 30,000 fish farmers in scientific aquaculture. Yield per hectare water area has been raised from 50 kg per hectare in 1973-74 to about 880 kg per hectare in 1983-84. Under the same programme total aquaculture technology (TACT) centre has been established to demonstrate higher yields. The demonstration of more than 5,000 kg per hectare per annum has been made in many of the TACT centres.

Spectacular achievement has been made in the field of inland fish seed production. During the Fifth Plan the production level touched 91.3 crore fish seed. As against this, a record production of 513 crore fish seed has already been achieved during 1983-84, the target for the concluding year of the Sixth Plan being only 222.4 crore.

A centrally sponsored scheme for development of Brackish Water Fish Farming with an area development concept has been launched in the country to develop 1,50,000 brackish water swamps and convert them into brackish water prawn|fish culture farms. Another component of this programme is to establish prawn seed hatcheries for the production of prawn seeds to be distributed among beneficiary farmers.

Training and Research

Training facilities are available at Central Institute of Fisheries Education, Bombay and its unit Inland Fisheries Training Centre, Barrackpur and Regional Training Centre at Agra. A Central Fisheries Extension Training Centre at Hyderabad trains candidates in extension techniques relating to fish culture.

The Central Institute of Fisheries, Nautical and Engineering Training, Cochin with its units at Madras and Vishakhapatnam is training candidates for marine fisheries operation for running the fishing vessels and shore establishments.

The three institutes *viz*. Central Marine Fisheries Research Institute and Central Institute of Fisheries Technology both at Cochin and Central Inland Fisheries Research Institute, Barrackpur handle research on various problems of marine and inland fisheries.

FORESTRY

In India, forests occupy an area of nearly 750 lakh hectares, about 22.8 per cent of the total geographical area. The national forest policy aims at maintaining atleast 11 crore hectares under forest cover with a view to securing ecological balance and environmental stability. The two basic themes of conservation and development now form the basic planks of policy of the Government. The rising population has reduced the per capita availability of forests area to 0.11 hectares, and has resulted in fuelwood shortage of 940 lakh tonnes. An estimated population of 35 crore people, mainly in rural areas, depend on fuelwood as a source of domestic energy. The dependence of forest dwellers on forests for their daily needs has also been highlighted in the policy proposals of the Government.

The first step that the Government took in the field of conservation of forests was to enact the Forest (Conservation) Act, 1980 to ensure that no forest area can be diverted for non-forest purposes withou the prior approval of the Government.

Table 14.3 gives the present extent of forest area and its classification.

Resources

The present growing stock is estimated to be 210 crore cu. meters or 37 cu. meters|hectares. This is low because many forest area of the country have scrub formations, or have been opened up du to heavy demand of the people and their livestock. The annual increment is also just over 1 cu. meter for hectare, which is among th lowest in the region.

TABLE 14.3
FOREST AREA AND ITS CLASSIFICATION

('000 hectare)

Description	1980-81
1. *By ownership*	
(i) State owned	70,462
(ii) Corporate bodies	3,700
(iii) Private individual	900
Total	75,062
2. *By legal status*	
(i) Reserved	39,484
(ii) Protected	21,824
(iii) Unclassed	13,754
Total	75,062
3. *By Composition*	
(i) Coniferous	7,800
(ii) Non-coniferous or broad leaved (including bamboo stands)	67,262
Total	75,062

The Indian forests yield a large number of major and minor forest products. The major products are timber and firewood. These are used for industrial and fuel purposes. Apart from providing raw materials for pulp, panel products, match wood and other wood based industries, forests also are a source of a number of useful minor products like bamboo, canes, *kendu* leaves, grasses, essential oils, medicinal plants, lac, resins, fatty oils and fats, gum, tanning material, dyes, animal products, etc. Quite a number of these are valuable foreign exchange earners.

Organisation

The Ministry of Agriculture and Co-operation deals with forestry at the Centre. The Inspector-General of Forests is the ex-officio Additional Secretary to the Government of India for all forestry matters. The Central Forestry Commission with the Inspector-General of Forests as its chairman, services the Central Board of Forestry. The Board, which co-ordinates policy and other matters at the national level, meets annually. The Forest Research Institute and Colleges are under the administrative control of the Ministry.

A National Poplar Commission was established in 1965 to study scientific, technical, social and economic aspects of poplars and willow cultivation. India is a member of the International Poplar Commission.

Government owned forests in the states are under the administrative control of respective state governments. The head of the forest department in the state is the Chief Conservator of Forests. Forests and wild life figure in the concurrent list.

Nineteen Forest Development Corporations have been established in different states|union territories with the objective of undertaking extensive plantation of fast growing and economically important trees species as also setting up of forest industries.

The Indian Forest Service extending to all states and union territories was constituted in 1966.

National Policy

In 1952, Government enunciated the new forest policy replacing the 1894 policy. The new policy proposed the classification of forests on a functional basis, *viz.* protection forests, national forests, and village forests. The policy considered it desirable to establish tree lands wherever possible for the amelioration of the physical and the climatic conditions, and for promoting of the general well-being of the people. It also laid down that it should be the aim to have one-third of the country under forests. It made provision for ensuring progressively increasing supplies of fodder, timber for agricultural implements and firewood to release cattle dung for use as manure. The national policy also opposed the indiscriminate extension of agriculture by the excision of forests, as this not only deprives the local population of wood, grass, etc., but also deprives the land of its natural defences against dust storms, hot winds and erosion. It also emphasised the need for affording protection to wild life by its proper management for scientific study and for recreational purposes.

The national tree planting festival *Van Mahotsava* is observed annually all over the country. World Forestry Day too is celebrated on 21 March every year. To promote wild life conservation, first week of October has been dedicated as Wild Life Week.

Social Forestry

The strategy for overall forestry development in the country envisages not only a major thrust in the production forestry sector but also ushering in an energetic and viable social forestry programme in order to meet the demand for fuel wood, green manure, fodder, etc., in the country. While production forestry envisages raising of industrial plantations on a large scale to meet the industrial raw material requirements, social forestry programme is confined to the uncultivated lands and also in conjunction with farm lands. It is for a wood-based production system for (i) site improvement, (ii) habitat improvement, and (iii) major and minor forest products.

Government has launched three schemes for the social forestry scheme, namely, (i) mixed plantation on waste lands and panchayat lands, (b) reafforestation of degraded forests and raising of shelter belts, and (c) rural fuelwood plantations (introduced in 1980-81). Under the latest scheme, 157 districts chronically deficient in fuel wood, have been selected in the country for raising quick growing fuelwood and fodder species near the villages, on waste lands, village common lands, along the sides of roads, canals and railway lines, etc., and free supply of seedlings to farmers for planting in their farms.

A Tree for Every Child Programme has also been introduced in the country for creating tree consciousness among the children. The states are also undertaking their own massive social forestry programmes.

Agro-forestry system, a combination of the forest, and agricultural crops, is being used for controlling the menace of shifting cultivation and for regenerating the forests at comparatively low cost. Under the system, cultivators are allowed to use the forest land free of rent for a certain period ranging between 2-3 years for raising plantations of the desired species. Likely, in some areas the right to cultivate between the tree lines is auctioned in order to make up for the cost of plantation.

Special emphasis has been laid for the protection of environment in the Himalayan region. A Centrally sponsored scheme of soil, water and tree conservation in the Himalayas (Operation Soil Watch) is under implementation.

The Sixth Plan envisages an outlay of Rs 692.49 crore for development of forestry. The target of planting 21.5 lakh hectares is likely to be exceeded as the targets have been surpassed every year.

Education Research and Training

Forestry education in India was started in a small way in 1881. During the last hundred years, the number of forest colleges has increased, their training capacity enhanced and the quality of education improved.

The Forest Research Institute and Colleges at Dehra Dun, with its regional branches and field centres, is the main centre for research in forestry and forest products and for imparting forestry education. Under the administrative control of the Institute, four forest colleges impart training to officers at the superior level. These are : (i) the Indian Forest College (trains Indian Forest Service personnel); (ii) State Forest Service, Burnihat, Assam; (iii) State Forest Service College, Coimbatore; and (iv) State Forest Service College, Dehra Dun. In addition, for training range forest officers, five Forest Rangers Colleges have been established, one each in Chandrapur (Maharashtra), Balaghat (Madhya Pradesh), Dehra Dun, Coimbatore and Kurseong (West Bengal). Then there are forest colleges under some state governments.

The Forest Research Institute and Colleges have been recognised by the Food and Agriculture Organisation as an international centre for the study of forestry in South East Asia and Pacific Region.

To train Indian forestry personnel in the modern business aspects of forest resources, an Institute of Forest Management started working as an autonomous body from October 1982 at Bhopal.

An organisation known as the Forest Survey of India (FSI) was set up in June 1981 to assess and to periodically monitor the forest resources of the country. This is a modified body with enlarged objectives of the earlier organisation of Pre-investment Survey of Forest Resources set up in 1965.

The Council for Forestry Research and Education is a broad-based body to provide working committees to deal with various aspects of forestry research and education.

Forestry as a subject has also been introduced in a number of universities.

AGRICULTURAL RESEARCH

The Department of Agricultural Research and Education, set up in 1973, in the Ministry of Agriculture, is responsible for co-ordinating research and educational activities in the fields of agriculture, animal husbandry and fisheries in India. Besides, it helps to bring about inter-institutional and intra-institutional collaboration both with national and international agencies engaged in the same and allied fields. The Department provides Government linkage to the Indian Council of Agricultural Research (ICAR).

Indian Council of Agricultural Research

The ICAR, set up in July 1929 as a registered society, is the apex body for formulating plans and co-ordinating agricultural, animal husbandry and fisheries sciences research and their application at field-level through the medium of extension agencies under the central and state governments and also through the agricultural universities. The ICAR is involved directly in the research set up through the existing 33 central institutes, 3 national research centres, 5 project directorates, 22 national research bureaux and 66 all India co-ordinated research projects.

Krishi Vigyan Kendra

The ICAR has established a large number of first line training institutions, *Krishi Vigyan Kendras* (KVKs) and has undertaken 145 operational research projects spread all over the country. KVKs impart practical skill oriented training to the farmers, farm women and unemployed village youth. School drop-outs and village level extension functionaries learn through "Leaning by Doing" approach. Sixty nine KVKs and 8 trainers training centres are in operation in different parts of the country.

Lab to Land Programme

The ICAR had adopted 50,000 farming families of small and marginal farmers and landless agricultural labourers for their economic uplift under the first phase of its Lab to Land Programme. In this programme efforts are made to introduce the latest and relevant technologies to help in diversification of labour use and introduction of supplementary source of income in all the fields of animal husbandry, sericulture, acquaculture, apiculture, home crafts etc., in addition to agriculture. It has now been further extented to cover 75,000 new farming families. The programme is being implemented through 142 transfer of technology centres spread all over the country.

National Demonstrations

National demonstration project aims at demonstrating maximum genetic production potential of major crops on farmers' own fields. Presently, the project is operating in 47 districts. Over 2,500 such demonstrations are laid out by scientists every year. On an average over 70,000 farmers are benefitted from these demonstrations.

The ICAR has laid special emphasis on research and training programmes for the tribal and backward classes. Three institutes—the Central Agriculutral Research Institute for Andaman and Nicoba Islands, ICAR Research Complex for North-Eastern Hills Region and the Indian Lac Research Institute are conducting research exclusively on agricultural problems relating to tribal/backward areas.

Agricultural Scientists Recruitment Board was set up in Decembe 1973 as an independent recruiting agency of the ICAR. The Board is concerned with recruitment to all scientific posts equivalent t Class I and above and technical posts equivalent to senior Class I posts.

The ICAR provides a number of senior level and junior level fellowships and scholarships for the scientists in different disciplines of agriculture, animal sciences, home sciences, etc. A scheme for the awar of 300 post-matric scholarships, 300 junior and 150 senior fellowships at different levels of education was introduced under Huma Resources Development Programme.

Under the national agriculture research project. 22 universitie are receiving assistance.

AGRICULTURAL STATISTICS

Census

The first comprehensive agricultural census was carried out wit 1970-71 as the reference year. It provided very useful data on th structure of agricultural holdings and their main characteristics. Th second agricultural census was conducted with 1976-77 as the referenc year. Its report is being released. The scope of the second census wa enlarged by including an input survey under which data on the exten of use of various fertilizers, manures, pesticides and availability o livestock, agricultural machinery and implements were collected through sample enquiries.

The data indicates that while there was no appreciable change in the total operated area (16.30 crore hectares) the number of operational holdings had increased by 15 per cent in 1976-77 over 1970-71. However, a positive shift in the operated area from large holdings to smaller holdings was noticed in 1976-77 census. As such the average size of a holding declined from 2.3 hectares in 1970-71 to 2 hectares in 1976-77.

The third agricultural census with 1980-81 as the reference year and the input survey with 1981-82 as the reference year has been mostly completed. Tabulation of the data is in progress.

Land Utilisation

Land utilisation statistics are available for 92.7 per cent of the total geographical area of 32.88 crore hectares. According to land use statistics available from the states, the area under forests has increased from 4.05 crore hectares in 1950-51 to 6.74 crore hectares in 1980-81. Net area sown has improved from 11.9 crore hectares to 14 crore hectares. The broad cropping pattern indicates that though foodgrains have a preponderance in gross-cropped area over non-foodgrains, the relative share has come down from 76.7 per cent during 1950-51 to about 74 per cent in 1980-81.

15 IRRIGATION

India has a very great diversity and variety of climate and weather conditions, ranging from extremes of heat to extremes of cold, from extreme humidity to torrential rainfall. The precipitation timings and duration are also much varied resulting in vagarious conditions, making it imperative to have recourse to irrigation.

IRRIGATION POTENTIAL

Recognising this need, a sustained and systematic programme for development of irrigation facilities in the country was taken up with the start of planned development in 1951. The irrigation potential in 1951 was 226 lakh hectares of which 97 lakh hectares was from major and medium irrigation projects and 129 lakh hectares from minor irrigation schemes.[1]

The cumulative irrigation potential increased to 565 lakh hectares by the end of 1979-80 of which 265 lakh hectares were from major and medium irrigation and 300 lakh hectares from minor schemes. During the Sixth Plan period it was targeted to create an additional potential of 1,374 lakh hectares *viz*. 574 lakh hectares from major and medium irrigation and 800 lakh hectares from minor irrigation schemes. Till the end of 1983, cumulative potential of 633.6 lakh hectares had been created from major, medium and minor irrigation schemes.

MAJOR IRRIGATION

Between 1951 and 1980, 205 major and 916 medium schemes were taken up for execution. Among them 29 major and 469 medium schemes were completed by 1980. During the Sixth Plan, 52 more major schemes and 154 medium schemes are likely to be completed.

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[1] Major irrigation projects use surface waters each with a culturable command area (CCA) of 10,000 hectares and above, medium irrigation works each use surface water with CCA of 2,000 to 10,000 hectares and minor irrigation projects have very small surface water works with a CCA less than 2,000 hectares each and ground water development works.

The Planwise irrigation potential through major and medium irrigation schemes is shown in table 15.1.

TABLE 15.1
IRRIGATION POTENTIAL AND UTILISATION

(lakh hectares)

Cumulative potential and utilisation to the end of

	Pre Plan	First Plan	Second Plan	Third Plan	Annual Plans	Fourth Plan
Potential	97	122	143	165	181	207
Utilisation	97	110	129	152	167	187

	Fifth Plan	Annual Plan	Sixth Plan Target	Achievement (1982-83)
Potential	247	265	322	292
Utilisation	212	223	279	240

While the annual rate of creation of irrigation potential from major and medium projects was 4 to 6 lakh hectares upto Sixth Plan, the present rate is nearly 9 lakh hectares.

MINOR IRRIGATION

Minor irrigation programme includes ground water development through construction of dugwells, private shallow tubewells, deep public tubewells, boring and deepening of dugwells, etc., and small surface water development lift irrigation projects.

Ground water development which forms bulk of the minor irrigation programme is essentially a peoples' programme implemented primarily through individual and co-operative efforts with finances obtained mainly from institutional sources. The programme thus imposes much less burden on the public exchequer. It is widely distributed and provides an instant and reliable sources of irrigation in the hands of cultivators. It provides critical help in improving the states of irrigation supply and in controlling water logging and salinisation in the canal command. Minor surface water projects which are financed through public sector funds often provide the means of irrigation in several undulating tracts comprising bulk of the chronically drought affected areas. Initial investments on these schemes are comparatively less and these can be completed quickly. Moreover, these are labour intensive and offer abundant opportunity for employment of rural people. The growth of irrigation potential (utilization) from minor irrigation schemes are given in table 15.2.

MULTI-PURPOSE PROJECTS

Some of the major irrigation and multi-purpose projects are as follows :

Nagarjunasagar

The Nagarjunasagar project comprises the construction of a 1,450-metre long masonry dam with 3,414 metre long earthen flanks on the Krishna near Nandikonda village, about 144 km from Hyderabad and two canals, one on each side of the river. The 204-km long right bank canal and the 179-km long left bank canal will together irrigate 8.95 lakh hectares. The dam has been completed. Work on the canals is under way. An irrigation potential of 6.89 lakh hectares out of a total potential of 8.95 lakh hectares had been created by June 1982.

TABLE 15.2
IRRIGATION POTENTIAL FROM MINOR PROJECTS

(lakh hectares)

Period	Minor Irrigation Potential
Ultimate Potential	550
Position at the end of 1950-51	129
First Plan	140
Second Plan	147·5
Third Plan	170
Annual Plan 1968-69	190
End of Fourth Plan 1973-74	235
End of Fifth Plan 1977-78	273
End of Annual Plan 1979-80	300
End of 1980-81	314
End of 1981-82	327·7
End of 1982-83	341·6
End of 1983-84 (likely)	355·9
End of 1984-85 (target)	371·1
Likely at the end of Sixth Plan	370

Tungabhadra

A joint project of Andhra Pradesh and Karnataka, the Tungabhadra project comprising a 2,441-metre long and 49.38-metre high dam on the Tungabhadra was completed in 1956. Work on the canals and distribution system has been largely completed. Out of irrigation potential of 4.97 lakh hectares, a total irrigation potential of 3.22 lakh hectares had been created by June 1981.

Pochampad

The Pochampad project in Andhra Pradesh envisages construction of an 812-metre long and 43-metre high masonry dam with earthen flanks across the Godavari. There will be a 113-km long right bank canal to irrigate an area of 2.24 lakh hectares. Work on the dam and the canal is in progress. An irrigation potential of 1.88 lakh hectares had been created by June 1982.

Gandak

Bihar and Uttar Pradesh are the participating states in the project. Nepal, under an agreement signed with India in 1959, derives irrigation and power benefits from it. The irrigation potential of the project is 14.58 lakh hectares.

The 740-metre long barrage and appurtenant works were completed in 1969-70. The main western canal was opened in December 1972. Partial irrigation has commenced from the main eastern canal. The Nepal eastern canal was inaugurated in 1973. The project is to be completed during the Sixth Plan. An irrigation potential of 11.98 lakh hectares had been created by 1982-83 in Bihar and Uttar Pradesh.

Kosi

The multi-purpose Kosi project in Bihar envisages irrigation, flood control and other benefits. An agreement on the project was signed between India and Nepal in 1954 and revised in 1966. The irrigation potential of the project is 4.34 lakh hectares. Flood embankments under the project were completed in 1959.

The barrage near Hanumannagar in Nepal was inaugurated in 1965. The eastern Kosi canal system is practically complete except for the distribution system and drainage.

Four more schemes have been sanctioned under the second stage of the project. They are : a 20 mw power house, the western Kosi canal, the Rajpur canal and extension of the flood embankments.

The western Kosi canal project provides for the construction of a 112.65-km (including branch canal of 20.57 km in the last reach) long main canal taking off on the right bank of the Kosi barrage at Hanumannagar. The first 35.13 km of the main canal lies in Nepal. The project, after completion, will irrigate 2.89 lakh hectares. The Rajpur canal scheme, envisaging construction of a branch canal of the eastern main canal, will irrigate an area of 1.25 lakh hectares. Out of an ultimate irrigation potential of 8.48 lakh hectares potential of 4.96 lakh hectares had been created by 1982-83.

Sone High Level Canal

The Sone High Level Canal project in Bihar has been conceived as an extension of Sone barrage project, which aims at modernisation and extension of the existing irrigation system from Sone. The project when completed will irrigate 1.61 lakh hectares. An irrigation potential of 1.60 lakh hectares (approx.) had been created up to 1982-83.

Ukai

The Ukai multi-purpose project in Gujarat consists of a 4,928-metre long and 68.6-metre high dam across Tapi near Ukai village. The project will irrigate 1.53 lakh hectares and generate 300 mw of power. Ukai dam and power house have been completed. Ultimate irrigation potential of 1.53 lakh hectares had since been created.

Mahi

The Mahi project in Gujarat has two stages. Stage I consists of a 796-metre long and 20.6-metre high masonry pick-up weir across the Mahi river near Wanakbori village. A 74-km long canal takes off on the right side to irrigate a total area of 1.86 lakh hectares. Stage II envisages construction of a 1,430-metre long and 58-metre high compositive dam across the Mahi near Kadana to irrigate an area of 89,000 hectares in addition to area under Stage I. The work on Kadana is in advanced stage of construction.

By 1979-80, full irrigation potential of 2.61 lakh hectares was created.

Sabarmati

The Sabarmati reservoir project in Gujarat envisages the construction of (i) storage dam across Sabarmati river near Dhari village in Mahesana district with a system of canals off-taking from the reservoir on both banks; (ii) Wasna barrage near Ahmedabad with a feeder canal therefrom to the existing Fatewadi canals. It will create ultimate irrigation potential of 59,000 hectares. An irrigation potential of 48,000 hectares had been created by June 1983.

Panam

The Panam reservoir project in Gujarat consists of a gravity masonry dam across Panam river near Keldezar village in Panchmahals district. It will irrigate 53,000 hectares and will also provide water supply to Bando and industrial areas around Vadodara. An irrigation potential of 47,000 hectares had been created by June 1983.

Karjan

The Karjan reservoir project in Gujarat envisages the construction of a masonry dam 885-metre long across Karjan river near Jitgadh village in Nandoo taluka of Bharuch district. The project will irrigate 72,000 hectares.

Bhadra

The Bhadra multipurpose project across the Bhadra river in Karnataka, when completed, will irrigate 1.05 lakh hectares of land and generate 25 mw of power. The Bhadra reservoir and most of the irrigation system under it have been completed.

Upper Krishna

The Upper Krishna project in Karnataka consists of Narayanpur dam across the Krishna with a canal taking off from the left bank and the construction of a dam at Almatti. The project has started yielding benefits. An irrigation potential of 17,000 hectares had been created by 1982-83. Ultimate potential of the project is 4.25 lakh hectares.

Ghataprabha

The Ghataprabha valley development scheme envisages harnessing of the water of Ghataprabha for irrigation in Belgaum and Bijapur districts of Karnataka. It is proposed to be implemented in three stages. Stage I of the project envisaged a masonry weir, 2,085-metre long and 9-metre high across Ghataprabha at Dhupdal, with a left bank canal 71-km long. Stage II envisaged construction of a composite dam, 5,275-metre long and 50-metre high at Hidkal and extension of Ghataprabha left bank canal from 71 km to 114 km. Stage II is practically complete. Stage III envisages raising of Hidkal dam and construction of a 197-km long right bank canal taking off from Hidkal dam. Out of the total potential of 3.18 lakh hectares, a potential of 1.47 lakh hectares has already been developed.

Malaprabha

The Malaprabha project, a 154.6-metre long and 44-metre high masonry dam, will be constructed across the Malaprabha in Belgaum district of Karnataka and canal systems taking off from both flanks of the reservoir. The project has an ultimate potential of 2.13 lakh hectares. The dam has been completed. Construction of canals is in progress.

Tawa

The Tawa project envisages the construction of a reservoir across the Tawa river, a tributary of the Narmada ,in Hoshangabad district of Madhya Pradesh. The 1,627-metre long dam will be earth-cum-masonry type. On completion, the project will irrigate about 3.33 lakh hectares. The project is in an advance stage of construction and part benefits have started flowing. A potential of 2.50 lakh hectares have been created till June 1983.

Chambal

The Chambal project is being jointly executed by Madhya Pradesh and Rajasthan. In the first stage, the Gandhi Sagar dam and its 115 mw power station and the Kota barrage were completed. The Rana Pratap Sagar dam with a power house of 172 mw capacity was constructed in the second stage. The third stage comprises the construction of the Jawahar Sagar dam and a 99 mw power station. With the completion of all three stages, the project will generate 386 mw of power. Out of the ultimate irrigation potential of 5.15 lakh hectares, a potential of 4.89 lakh hectares had been created by the end of June 1983.

Mahanadi Reservoir Project

The Mahanadi reservoir project in Madhya Pradesh has three phases. Phase I envisages the construction of Ravishankar Sagar project and feeder canal system for water supply to Bhilai steel plant and Sandur dam across the Sandur river with its canal system. Phase II envisages the extension of Mahanadi feeder canal, distribution up to 40 hectares and lining main canals and distributaries, Abhanpur lift canal system and extension of distributary No. 2 Mahanadi main canal system. Phase I and II are under construction. Out of an irrigation potential of 3.40 lakh hectares an irrigation potential of 56,500 hectares has been created by June 1983. Phase III is a new scheme of Sixth Plan and comprises Pairi dam.

Hasdeo Bango Project

The Hasdeo Bango Project in Madhya Pradesh forms phase III of the Hasdeo Bango Project complex. Phase I and II have been substantially completed. Phase III envisages the construction of 85-metre high masonry dam across Hasdeo river, about 45 km upstream of existing barrage so as to utilise the stored water of Hasdeo and irrigate 3.28 lakh hectares annually, besides generating power and providing water to super thermal stations and for industrial uses.

Bargi Project

The Bargi project in Madhya Pradesh consists of (i) the construction of a masonry dam across the Bargi river in the Jabalpur district and (ii) the construction of 135 km left bank canal. This is a multi-purpose project to provide irrigation, hydro power and water supply for Jabalpur. On completion, it will irrigate 2.45 lakh hectares.

Bhima

The Bhima project envisages construction of two dams, one on the Pawana river near Phagne in Pune district and the other across the Krishna near Ujjaini in Solapur district. The Pawana dam will be 1,319-metre long and 42-metre high. The Ujjaini dam will be 2,467-metre long and 56.4-metre high. Work on Pawana component of the project is complete. Ujjaini dam is nearing completion. The 139-km long main canal will take off from the left bank. The project will have an irrigation potential of 1.62 lakh hectares. A potential of 53,610 hectares had been created by June 1983.

Jayakwadi

The Jayakwadi project envisages the construction of a 37-metre high earthen dam with a masonry spillway across Godavari in Maharashtra in the first stage. A 240-km long canal will take off from the left side to irrigate an area of 1.42 lakh hectares. The second stage of the project envisages construction of a 133-km canal on the right side, a 30.5-metre high and 6,090-metre long dam across Sindphana river at Majalgaon and a right bank canal from Majalgaon dam. Another 1.36 lakh hectares will be irrigated when stage II is completed.

Out of an ultimate potential of 2.78 lakh hectares a potential of 1.67 lakh hectares was created by the end of June 1983.

Kukadi Project

The Kukadi project in Maharashtra comprises five independent storage dams, *viz.*, Yodgaon, Manikdohi, Dimbha, Wadaj, and Pimpalgaon Jog. The canal system comprises the following : Kukadi left bank canal 253 km, Dimbha left bank canal 55 km, Dimbha right bank canal 72 km, Meena feeder 14 km and Neena branch 40 km. Out of total irrigation potential of 1.56 lakh hectares, an irrigation potential of 24,530 hectares had been created by June 1983.

Krishna Project

The Krishna project in Maharashtra comprises Dhom dam near Dhom village on Krishna and Kanhar dam near Kanhar village on Varna river in Satara district. It will irrigate 1.12 lakh hectares and irrigation potential of 52,880 hectares had been created by the end of June 1983.

Upper Penganga

The Upper Penganga project in Maharashtra envisages the construction of two reservoirs on Penganga river at Isapur in Yavatmal district and the other on Rayadhu river at Sapli in Parbhani district. The total length of the canals is 366 km. The project will irrigate 1.15 lakh hectares and irrigation potential of 7,600 hectares has been created by the end of June 1983.

Hirakud

The 4,801.2-metre long main Hirakud dam in Orissa, the world's longest, impounds 810 crore cubic metres of the Mahanadi water. The project irrigates an area of 2.51 lakh hectares. Its present installed power generation capacity is 270.2 mw.

Mahanadi Delta Scheme

The Mahanadi delta irrigation scheme is being executed to make use of the releases from the Hirakud reservoir. An irrigation potential of 5.49 lakh hectares has been created by June 1983.

Rajasthan Canal

The Rajasthan Canal project will provide irrigation facilities to the north-western region of Rajasthan which is a part of the Thar desert. The project, which will use waters from Pong dam, consists of the 204-km long Rajasthan feeder canal (with the first 167-km in Punjab and Haryana and the remaining 37-km in Rajasthan) and the 445-km long Rajasthan main canal lying entirely in Rajasthan.

The first stage of the project consists of the construction of the feeder canal in full and 180 km of the main canal and 3,000-km long distribution system. The feeder and the main canal have been completed.

The second stage covers the construction of the remaining 256 km of the main canal and the 3,500-km long distribution system. The work on stage II has also been started and is scheduled to be completed by 1985-86. The project will ultimately irrigate about 12.58 lakh hectares. An area of 6.06 lakh hectares has been brought under irrigation command by 1982 of which 4.30 lakh hectares had actually been irrigated by June 1983.

Parambikulam Aliyar

This joint venture of Tamil Nadu and Kerala envisages the integrated harnessing of eight rivers, six in the Annamalai Hills and two in the plains. The scheme will irrigate about 1.01 lakh hectares and also have an installed power generating capacity of 185 mw. A potential of 94,740 hectares had been created by June 1983.

Improvement of Periyar Vaigai System

This project of Tamil Nadu envisages : (i) construction of pick-up weir; (ii) construction of lined link canal; and (iii) lining of main canals, branches and distributaries of supply channels and tanks. The pick-up anicut has been completed. Tirumanglam main canal branch distributary has been completely lined. Other lining is in progress. The ultimate potential of the scheme is 10,310 hectares.

Sarda Sahayak

The Sarda Sahayak project envisages construction of (i) a 1,003-metre long barrage across Ghagra river, (ii) a link channel of 28-km length, (iii) a 811-metre long barrage across the Sarda river, (iv) a feeder channel of 260-km length involving construction of two major aqueducts over Gomti and Sai rivers and (v) remodelling of 6,450 km of distribution system and construction of 2,570 km of new channels. The works are being executed in five stages. Stage I and II have been practically completed and commissioned. Out of an ultimate irrigation potential of 15.82 lakh hectares, 15.26 lakh hectares potential has been created by the end of 1982-83.

amganga

The Ramganga, a major tributary of the Ganga in Uttar Pradesh, is being tamed with a 625-metre long and 127.5 metre high earth and rock-fill dam and a 72 metre high saddle dam in the Garhwal district. The project will irrigate 5.91 lakh hectares, have an installed power capacity of 198 mw, supply 200 cusecs of water for the Delhi water supply scheme and reduce the intensity of floods in central and western Uttar Pradesh. The dam was completed in June 1974. Full irrigation potential of 5.91 lakh hectares had been created by the end of 1979-80.

Left Bank Ghagra Canal

The Left Bank Ghagra Canal project envisages the construction of a link channel of 360 cusecs capacity which will take off from the left bank of river Ghagra of Girja barrage and will join Sarju river. A barrage will also be constructed across Sarju from where Sarju main canal with 360 cusecs capacity will take off. Nearly 83 per cent work of Sarju main canal has been completed together with 60 per cent of masonry work by the end of March 1983. The project potential is 14 lakh hectares.

Tehri Dam

The Tehri Dam project of Uttar Pradesh envisages construction of 260.5 metre high earth and rock-fill dam on Bhagirathi in Tehri district of Uttar Pradesh. The total irrigation potential of the project is 6.7 lakh hectares.

Madhya Ganga Canal

The Madhya Ganga Canal project of Uttar Pradesh envisages the construction of a barrage across Ganga in Bijnor district and a 115-km long main canal taking off on the right bank for supplementing the discharge of Upper Ganga Canal and its branches. The work is in progress. The ultimate potential of the scheme is 1,78,000 hectares.

Farakka

The Farakka project in West Bengal was taken up for the preservation and maintenance of Calcutta port and for improving the navigability of the Hooghly. It consists of a barrage at Jangipur across the Bhagirathi, a 39-km long feeder canal, taking off from the right bank of the Ganga at Farakka and falling into the Bhagirathi below the Jangipur barrage and a road-cum-rail bridge over the Farakka barrage.

Construction work was started in 1963-64; the two barrages and the road-cum-rail bridge have been completed. Following the Indo-Bangladesh agreement of 18 April 1975, the scheme was commissioned on 21 April 1975. Work on the navigation structures is in progress.

Mayurakshi

The Mayurakshi project in West Bengal comprises the Canada dam 640-metre long and 47.24-metre high, and irrigates about 2.51 lakh hectares of land. The hydro-electric plant produces four megawatt of power. The project is partially complete.

Kangsabati

The Kangsabati project in West Bengal envisages the construction of earthern dams, connected together by intermediate dykes, on the Kangsabati and Kumari rivers. Its canal system would cross the

Silabati, Bhairoh Banki and Terafeni rivers, on which three pick-up barrages will be constructed. The project will benefit an area of 4.02 lakh hectares. A potential of about 3.68 lakh hectares had been created by 1982-83.

Damodar Valley Project

The Damodar Valley project was conceived for the unified development of irrigation, flood control and power generation in West Bengal and Bihar. The project is administered by the Damodar Valley Corporation (DVC), established in 1948. The DVC has completed multipurpose dams and hydel power stations at Tilaiya, Konar, Maithon and Panchet, a 672-metre long and 11.58-metre high barrage at Durgapur, 2,495 km of irrigation canals and three thermal power houses at Bokaro, Chandrapura and Durgapur. The irrigation potential of the project is about 5.15 lakh hectares and its installed power generating capacity is 1,181 mw, made up of 1,077 mw of thermal and 104 mw of hydel power. A potential of 4.40 lakh hectares had been created by 1982-83.

FLOOD CONTROL

After the extremely severe floods experienced in 1954, it was considered that efforts in the field of flood control need to be intensified on the basis of a well planned programme. Accordingly, the National Flood Control Programme was launched in 1954. The programme was divided into three phases-immediate, short-term and long-term. The immediate phase was devoted to intensive collection of data and execution of emergent flood protection measures. The short-term programme which was roughly to coincide with the Second Plan, envisaged the construction of embankments, protection of some towns, raising of villages, etc. The long-term phase envisaged the construction of storage reservoirs, stabilising benefits of the works already carried out as well as taking up of additional works of embankments, river draining, etc.

Flood Control Bodies

At the state level, a technical advisory committee examines the proposals approved by the state flood control board, which also lays down policies at the state level. At the national level, major schemes are examined in detail by the Central Water Commission, Ganga Flood Control Commission and then approved by the Planning Commission. Appreciating the magnitude and complexity of the flood problem of Brahmaputra Valley, the Brahmaputra Board was set up by the Government on 31 December 1981. The important functions of the Board include surveys and investigations in the Brahmaputra Valley, to prepare a master plan to control floods, bank erosion, an improvement of drainage keeping regard for the development of the water resources of Brahmaputra basin for irrigation, hydropower, navigation and other beneficial purposes.

Flood Control Works

Since the commencement of the national flood control programme in 1954, nearly 12,905 km of embankments, 25,331 of drainage channels, 332 town protection works/schemes and raising of level of about 4,700 villages have been completed by March 1983. In addition, anti-erosion measures to protect the coastline, especially in Kerala, were taken up. Out of 320 km of the vulnerable coastline, 281 km have so far been protected upto March 1983. These works were carried out at a cost of about Rs 1,442 crore and afforded reasonable protection to an area of 124.33 lakh hectares. In addition a number of reservoirs projects have been completed which have helped in moderating the flood peaks in the downstream reaches. Notable among these are Hirakud dam on Mahanadi, Konar, Maithon, Panchet and Tilaiya dams on Damodar, Bhakra dam on Sutlej, Pong dam on Beas and Ukai dam on Tapi.

Flood Forecasting

Government has set up a flood forecasting organisation to issue advance warnings about impending floods so as to alert the agencies concerned with rescue and relief to organise themselves and to put into action the flood fighting and maintenance organisation to gear up to the emergency. The Central Flood Forecasting Organisation with headquarters at Patna and Hyderabad has developed a network of 151 flood forecasting stations under 22 divisions catering for the requirement of most of the flood-prone rivers in the country. The warning issued by the control rooms under these divisions have been found to be extremely useful for flood fighting and relief measures operations. The hydrological observations conducted on scientific lines are also extremely useful in planning of water resources projects.

Flood Situation

For the Sixth Plan, the outlay proposed for flood control sector is Rs 1,045.10 crore as compared to Rs 976 crore as spent during the earlier plans upto March 1980. The expenditure during 1980-81 was Rs 156.40 crore, during 1981-82 Rs 163.20 crore and during 1982-83 Rs 146.92 crore. The anticipated expenditure during 1983-84 is Rs 164.30 crore.

During 1983, the total flood damages compiled on the basis of information furnished by the state governments is of the order of Rs 2,500 crore.

CENTRAL ORGANISATIONS

There are eight central organisations, which are responsible for planning, development and research in the field of irrigation.

The Central Water Commission is responsible for initiating and coordinating, in consultation with state governments, schemes for control, conservation and utilization of water resources for purposes of irrigation, navigation and flood control throughout the country.

The Central Board of Irrigation and Power, constituted in 1927, initiates fundamental research in the fields of irrigation and power and co-ordinates the work of research stations, established in different parts of the country. The Board also disseminates the results of the studies and information on irrigation and power development, both inside the country as well as abroad.

The Central Water and Power Research Station at Khadakvasla near Pune is the premier research station in south-east Asia dealing with a variety of subjects in the field of water resources development. The research station set up in 1916 has achieved a high degree of specialisation in a number of disciplines. It has been recognised as the regional laboratory for the Economic and Social Commission for Asia and the Pacific (ESCAP).

The Central Soil and Materials Research Station, New Delhi, established in 1954, deals exclusively with problems falling in the field of geomechanics and construction materials.

The National Institute of Hydrology, Roorkee, set up in December 1978 as a registered society, is designed to undertake, promote and coordinate systematic and scientific studies in theoretical and applied hydrology so as to improve the existing system of planning, design and operation of water resources projects.

The National Water Development Agency (NWDA) has been set up to initiate investigation relating to the peninsular component of the national perspective for water resources development in the country fo creation of optimum storage facilities along various rivers and transfe-ring the surplus flows for utilisation in deficit regions by constructing inter-connecting links. The perspective plan comprises two main components i.e. Himalayan river development and Peninsular river development. The NWDA is a registered society and is responsible for initiating investigations and surveys in nominated areas.

Two more organisations, the Minor Irrigation Division including Central Ground Water Board and the Command Area Development Division were transferred to the Ministry of Irrigation from the Ministry of Agriculture in July 1980. The Minor Irrigation Division reviews and co-ordinates planning and programming of minor irrigation schemes which includes all ground water development and those surface water minor irrigation schemes (both flow and lift) which have a culturable command area less than 2,000 hectares in the states. It sponsors schemes with 50 per cent matching central assistance for specified purposes/programmes. The Central Ground Water Board, a subordinate office of the Ministry of Irrigation, is an apex body at the national level, charged with the work of ground water survey and exploration at micro level in the country. It has regional offices and field staff in various states.

The concept of command area development was borne in the beginning of Fifth Plan, when it was realised that a multi-disciplinary organisation is required both at the Centre and the states to co-ordinate the work of construction of field channels, field drains, land levelling and shaping, etc., and provision of other infrastructure facilities like command area roads, marketing facilities for the produce, credit facilities, fertilizer and seed inputs, etc. The work of the Command Area Development is executed through the states as a Centrally sponsored programme.

Water and Power Consultancy Services

The Water and Power Consultancy Services (India) Ltd. (WAPCOS) was set up in 1969 by the Government to share the experience and expertise built up in the country over a long period with other developing nations. The Company provides comprehensive inter-disciplinary services for the planning and development of irrigation, drainage, flood control and river training works, irrigated agriculture land reclamation, water supply and sanitation, generation. transmission and distribution of hydro and thermal power, resettlement of transmigrants, etc.

The countries where WAPCOS rendered and/or is rendering consultancy services include Afghanistan, Bhutan, Burma, Fiji Islands, Indonesia, Iraq, Kampuchea, Laos, Malaysia, Mauritius, Nepal, Nigeria, Philippines, Republic of Korea, Singapore, Sri Lanka, Tanzania, Vietnam and Zimbabwe.

WAPCOS is registered with several international agencies and is engaged in providing consultancy services for projects aided/assisted by some of these organisations. In India, WAPCOS is engaged in joint project preparation and appraisal for some major irrigation projects aided by World Bank and Food and Agriculture Organisation.

INTERNATIONAL AGREEMENTS

India and Pakistan signed the Indus Water Treaty on 19 September 1960, fixing and delimiting the rights and obligations of the two countries with regard to the use of the waters of the Indus river system. It came into force with effect from 1 April 1960. As envisaged in the treaty, a permanent Indus Commission, representing both the governments, has been set up to establish co-operative arrangements for the implementation of the treaty.

Indo-Bangladesh Understanding

During the visit of Lt. General Ershad, President of the Council of Ministers, Government of Bangladesh and his meeting with the Indian Prime Minister, in October 1982, the two leaders discussed the experience of the working of the 1977 Farakka Agreement which was to expire on 4 November 1982. As a result of these deliberations, a Memorandum of Understanding was signed on 7 October 1982.

In the Memorandum, the two leaders recognised that the basic problem of inadequate flow in the Ganga available at Farakka imposed sacrifices on both countries and that it was necessary to arrive at an equitable sharing of the water available at Farakka. They further agreed that the long-term solution lay in augmenting available flows, and to this end directed their experts concerned to expedite studies of the economic and technical feasibility of the schemes which had been proposed by either side, in order to settle upon the optimum solution for urgent implementation. It was further decided that the Joint Rivers Commission would complete the pre-feasibility study and decide upon the optimum solution within a period of 18 months of the signing of the Memorandum, at the end of which the two Governments would immediately implement the augmentation proposal agreed upon by the Joint Rivers Commission. Meanwhile, it was agreed to share the flows available at Farakka for the next two dry seasons as per details agreed upon and incorporated as an annexure to the Memorandum of Understanding.

The Indo-Bangladesh Joint Rivers Commission started functioning in June 1972 with the principal objective of maintaining liaison between India and Bangladesh so as to ensure the most effective joint efforts in maximising the benefits from common river systems to both the countries and for formulating measures for mutual benefit in the fields of flood forecasting and warning flood control, etc.

Cooperation with USSR

A contract was signed between the Gujarat Government and USSR on 3 December 1981, for preparation of a feasibility report for setting up of an enterprise for production of pre-fabricated components for construction of canal structures and canal linings in Gujarat. A team of five Soviet experts visited India in 1982, and has submitted the feasibility report for the project.

A contract was signed on 31 December 1981 between the Central Water Commission and USSR for preparation of a pre-feasibility report for construction of an experimental dam and canal by using directional blasting technique in Himachal Pradesh. A team of five Soviet experts visited India during February-April 1982 and submitted a preliminary report.

16 RURAL DEVELOPMENT

Development of the rural areas has been one of the paramount concerns of the successive five year plans. Under the Community Development Programme launched in the early 50s a net-work of basic extension and development services was established in the villages. The programme helped in creating awareness in the rural communities of the potential means of development which made quicker adoption of major technological advances in agriculture possible, later in the mid 60s. Reinforced with abolition of intermediary landlords and reforms of land tenure system, the investments in the successive five year plans have led to the creation of essential physical and institutional infrastructure of socio-economic development in many rural areas.

Later, realising that the benefits of various development programmes were being mostly taken away by those better endowed in terms of land resources, programmes specifically designed for the development of small and marginal farmers and the landless and agricultural labourers were taken up in the early 70s. A special programme for the development of drought prone areas was introduced in the mid 70s and a programme of development of desert areas in the late 70s. Food for work programme was started in 1977 to provide opportunities of work for the rural poor particularly in slack employment periods of the year which would at the same time create durable community assets. This programme was redesigned as National Rural Employment Programme (NREP) in October 1980. With a view to removing regional disparities, particularly in less endowed or disadvantaged area like the hill and tribal areas, special sub-plans of development were introduced. A Minimum Needs Programme was designed to secure to the rural areas within a reasonable time frame certain basic amenities in the field of education, health, drinking water, electrification, roads and house-sites. Special financial concessions, credit on softer terms and subsidies have also been made available to under developed areas to attract increased agro-industrial investment.

The National Scheme of Training of Rural Youth for Self Employment (TRYSEM) was initiated in 1979 with the principal objective of removing unemployment among the rural youth. The Council for Advancement of Rural Technology (CART) has been set up under the Ministry of Rural Development to act as a nodal point for the transfer of appropriate technology after its development to all the villages of the country. To provide more employment opportunities for the rural landless, a new anti-poverty programme called Rural Landless Employment Guarantee Programme (RLEGP) was launched by the Prime Minister on 15 August 1983.

INTEGRATED RURAL DEVELOPMENT PROGRAMME

A number of programmes like the Small Farmers' Development Agency (SFDA), the Drought Prone Areas Programme (DPAP) and the Command Areas Development Authority (CADA) have been operating in the country—some for as much as the last ten years and the others introduced recently—aimed at improving the economic conditions of the rural poor. None of these programmes covered the whole country though a large number of blocks in the country had more than one of these programmes operating simultaneously in the same area for the same target group. This territorial overlap combined with the different funding patterns of these programmes, not only created considerable difficulties in effective monitoring and accounting, it often blurred the programme objectives. Though these special programmes did bring about considerable improvement in the living conditions of the poorer people, it became clear that the dimensions of rural poverty in India were such that a far more ambitious programme was required to remove the more degrading forms of rural poverty.

With the objective of raising the poorest families in the rural areas above the poverty line by giving them income generating assets and access to credit and other inputs, a new programme known as the Integrated Rural Development Programme (IRDP) was launched in 1978-79. This programme aims at reduction of unemployment in the rural areas and provision of assets and inputs to the rural poor for enabling them to rise above the poverty line on a lasting basis. This programme is now a component of the Revised 20-Point Programme.

Objectives

The IRDP is aimed at a target group consisting of the poorest among the poor. The target group includes small and marginal farmers, agricultural and non-agricultural labourers, rural artisans and craftsmen, scheduled castes and scheduled tribes and in fact all persons who live below the poverty line (families of about 5 persons with an annual income level below Rs 3,500). Of the 32 crore people below the poverty line in the country, about 26 crore are in the rural areas. The benefits under this programme are to flow exclusively to this target group. The primary objective of the programme is to raise the incomes of the families of the rural poor so that they go above the poverty line. A significant increase in the income of these families is to be brought about through generating opportunities of employment for them and also by giving them productive assets and resources. The twin objectives of raising incomes and generating employment are to be achieved through investment in agriculture and ancillary occupations, cottage and small-scale industries and in practically any viable economic activity which suits the beneficiary family. Under IRDP, there is no pre-determined sectoral allocation and the investments made in various economic activities are to be governed by the interest shown by the beneficiary in the activity and its acceptability to the bankin institutions. Agriculture, animal husbandry, fisheries, forestry, rura and cottage industries are some of the eligible items for assistance under the programme.

Coverage

The IRDP was initially taken up in 2,300 blocks in the country. The programme was being extended every year to 300 new blocks. Recognising that rural poverty and unemployment were widespread, a major policy decision was taken to extend the benefits of the programme to the target group families in all the 5,011 development blocks from 2 October 1980. The Small Farmers' Development Agency (SFDA) programme which was under implementation in selected areas was merged with IRDP on 2 October 1980.

Financial Allocation

Along with the extension of IRDP to all the blocks in the country, the financial allocation under the programme has also been rationalised. Earlier, different blocks had different financial allocations, ranging from Rs 2 lakh to Rs 10 lakh per block. From 1980-81 onwards, all the blocks are being provided with a uniform allocation of Rs 35 lakh per block during the Sixth Plan. The allocation is to be shared between the Centre and the states on 50 : 50 basis.

During the Sixth Plan period, assistance under this programme is to be given to 150 lakh families. On an average, at least, 3,000 families would be directly assisted under this programme in each block over a five-year period. The Sixth Plan outlay for IRDP is Rs 1,500 crore, shared equally by the Centre and the states. Credit to the tune of Rs 3,000 crore is also to be mobilized. Thus the total investment on this programme in the Sixth Plan will be about Rs 4,500 crore, making it one of the largest programmes in the Sixth Plan.

Financial Assistance

IRDP offers assistance for financing a large variety of economic activities. The programme envisages the identification of beneficiaries on the basis of objective criteria and the identification is to be done on the basis of proper inquiry by the implementing agencies. Presently, the objective is to cover at least 600 families in each block in a year. Of these, approximately 400 families would benefit through agriculture and related activities. About 100 families would be covered through village and cottage industries and another 100 families would be assisted in the services sector in a year. This proportion would vary from area to area on the basis of the actual conditions obtaining in each area. After identifying each individual household, appropriate economic activities would be identified in consultation with the beneficiary concerned and suitable bankable schemes would be drawn up. The capacity of the beneficiary to take risks, his existing resource base and his managerial ability are to be considered before schemes are drawn up. The programme is financed partly by subsidy and partly by bank loans. Nearly 2|3rds of the resources required for implementing the programme have to come from the co-operative and commercial banks.

Implementation

The authority to sanction schemes under IRDP has been delegated to the state governments. The block level plans are approved by a state level co-ordination committee. The co-ordination committee meets periodically to review the implementation of the programme in the states and offer necessary directions for accelerating the programme.

The implementation of the programme in the field is being done through the district level rural development agency, a society registered under the Societies Registration Act on the SFDA pattern, in every district. Wherever such agencies exist, the implementation of the programme has been entrusted to these agencies. In the districts where such agencies do not exist, the state governments have been advised to set up new district level agencies. The state governments have been requested to entrust the implementation of other rural development programmes like the NREP also to the same district level agency implementing the IRDP. Since the programme envisages preparation of comprehensive plan for every block, a three-member planning team at the district level comprising an economist/statistician, a credit planning officer and a small and cottage industry officer, is to be set up as a part of the district rural development agency. District Rural Development Agencies (DRDAs) on these lines have been set up in almost all districts and they are fully operational now.

Performance and Prospects

The IRDP gathered substantial momentum during the last two years. Against the annual target of covering 30 lakh families, the actual coverage of families was 27.83 lakh in 1980-81, 28.29 lakh in 1981-82 and 34.55 lakh in 1982-83. In 1980-81 the subsidy for the average beneficiary was Rs 561 and credit Rs 850. In 1981-82, the subsidy level for the average beneficiary rose to Rs 928 and credit to Rs 1,713. In 1982-83, the subsidy level for the average beneficiary has further risen to Rs 1,041 and credit to Rs 2,066.

Studies taken up for a thorough verification of assets distributed to the beneficiaries and to assess the impact on them have established that the programme is moving in the right direction in spite of several organisational and administrative inadequacies. Efforts are being made to remove these constraints and impediments and to accelerate the pace of implementation.

SPECIAL LIVESTOCK PRODUCTION PROGRAMME

The Special Livestock Production Programme (SLPP) initiated in 1975-76 aims at providing employment opportunities to the weaker section of the rural population. The programme is in operation in 21 states and 4 union territories and is being implemented by the states on a subsidy-cum-loan basis. The loans are arranged through institutional sources.

The scheme for cross-bred calf rearing provides feed subsidy at the rate of 50 per cent to small and marginal farmers and 66-2|3 per cent to agricultural labourers. The element of subsidy is given to the identified beneficiaries towards the cost of feeding the cross-bred heifer from 4 to 32 months, insurance and health cover. Under the scheme for the establishment of poultry, piggery and sheep production units, subsidy is given at the rate of 25 per cent to small farmers and 33-1|3 per cent to marginal farmers and agricultural labourers and 50 per cent in case of tribal participants.

The expenditure under this programme is being shared between the Central and state governments on 50 : 50 basis, while it is fully met by the Central Government in respect of union territories.

It has been decided that SLPP will continue as a separate scheme during the remaining period of the Sixth Plan. Outlay required for this programme will be met out of the overall provision made for

IRDP. It has been decided that provision of subsidy for this programme will be over and above the per block subsidy under IRDP.

DROUGHT PRONE AREAS PROGRAMME

Drought has been a recurring phenomenon in some parts of the country. Efforts are being made to solve the problem of the chronically drought affected areas in a systematic manner under the Drought Prone Area Programme (DPAP). The main objectives of this programme are : (a) promoting a more productive dry land agriculture on the basis of the soil-water-climate resources of the area; (b) development and productive use of water resources of the area; (c) soil and moisture conservation including promotion of proper land use practices; (d) afforestation including farm forestry; and (e) livestock development including development of pasture and fodder resources.

The programme at present covers 511 blocks in 70 districts of 13 states. The Sixth Plan allocation for this programme is Rs 350 crore shared equally between the Centre and the states. During the first three years of the Plan an expenditure of Rs 214.71 crore was reported by the states under this programme. During 1983-84, there was further expenditure of Rs 66.74 crore. The main physical works taken up under this programme relate to treatment of area under soil and moisture conservation, creation of fresh irrigation potential, afforestation, pasture development and livestock and dairy development.

DESERT DEVELOPMENT PROGRAMME

The Desert Development Programme (DDP) was started in 1977-78 with the objective of controlling desertification and development of conditions for raising the level of production, income and employment of the people living in these areas. The major activities under this programme are : (a) afforestation, grass land development and sand dune stabilisation; (b) ground water development and utilisation; (c) construction of water harvesting structure; (d) rural electrification for energising tube-well/pump-sets; and (e) development of agriculture, horticulture and animal husbandry.

The programme covers both hot and cold desert areas of the country. The total number of blocks covered under this programme are 126 in 21 districts. Out of these, 17 districts are hot desert areas and 4 districts are cold desert areas of 5 states.

Allocation of funds under DDP is related to the severity and expanse of the desert conditions. In the more hot arid areas, funds are allocated at the rate of Rs 10 lakh per annum per 1,000 sq km of geographical area subject to a ceiling of Rs 2 crore per annum per year. Less arid areas are allocated at Rs 60 lakh per district. As per the cold desert areas an annual allocation at one crore rupees for Leh including one block of Kargil district in Jammu and Kashmir and Rs 50 lakh each for two districts in Himachal Pradesh has been fixed.

The allocation for the Sixth Plan is Rs 100 crore for this programme.

NATIONAL RURAL EMPLOYMENT PROGRAMME

The problem of employment in rural areas is mainly of seasonal unemployment and under employment. Fuller employment opportunities for the rural work force have to be found within the agricultural and allied sectors, through intensification and diversification of agriculture based on expansion of irrigation and improved technology. However, the very dimensions of the problem call for a multi-pronged strategy which aims, on the one hand, at resource development of vulnerable sections of the population, and, on the other, provides supplementary employment opportunities to the rural poor, particularly during lean periods, in a manner which would at the same time contribute directly to the creation of durable assets for the community.

The Sixth Plan document estimates that the percentage of population below the poverty line in the rural areas would be reduced to 30 per cent by the end of 1984-85 from nearly 50 per cent in the beginning of the Sixth Plan period through various schemes of rural development. A substantial reduction in poverty is possible only if there is a determined effort for distribution of income and consumption in favour of poorer sections of the population. For this purpose, it is necessary that employment opportunities in the rural areas are significantly increased. The National Rural Employment Programme (NREP) which replaced the Food for Work Programme from October 1980 aims at achieving this objective.

Till 31 March 1981, the NREP was entirely funded by the Central Government. From 1 April 1981, the programme became a regular part of the Sixth Plan. It is now being implemented as a Centrally sponsored scheme on 50 : 50 sharing basis between the Centre and the states. A total provision of Rs 1,620 crore has been made for the programme in the Sixth Plan. However, the plan provision is expected to be exceeded substantially. The programme, included under the Revised 20-Point Programme, has three basic objectives : namely (i) generation of additional gainful employment for the unemployed and under-employed persons both men and women in the rural areas; (ii) creation of durable community assets for strengthening rural infrastructure, which will lead to rapid growth of rural economy and steady rise in the income level of the rural poor; and (iii) improvement of the nutritional status and the living standards of the rural poor.

The allocation of resources to the states|union territories are made on the basis of a prescribed criteria giving 75 per cent weightage to agricultural labourers and marginal farmers and 25 per cent weightage to incidence of poverty. Similar criteria is adopted for allocation of resources by the states to the districts except that in case data on poverty is not available, weightage is given to scheduled castes and scheduled tribes population in the district. Ten per cent of the resources are earmarked for social forestry works and another 10 per cent for works exclusively benefiting scheduled castes and scheduled tribes. For creation of durable community assets, 50 per cent of the resources allocated to the district as a whole can be utilised on non-wage component.

One kg of foodgrains is given as part of the wages to workers under the programme with a view to improving their nutritional standards. The foodgrains under the programme will be supplied at subsidised rates. The rate per kg is Rs 1.50 for wheat, Rs 1.85 for common rice, Rs 1.95 for fine variety of rice and Rs 2.10 for superfine variety of rice. The subsidy involved on this account is borne by the Government of India.

Between 1980-81 to 1983-84, following community assets in the rural areas were created under the programme which had made visible impact on the quality of life in the villages all over the country.

1. Area covered under afforestation and social forestry work on government land.	2,99,159 (hectares)
2. Trees planted	1,698.25 lakh (numbers)

3. Drinking water wells/community irrigation wells/group housing and land development for scheduled castes/scheduled tribes	3,05,996	(numbers)
4. Construction of village tanks	36,850	(numbers)
5. Area benefited through minor irrigation works, flood protection works, construction of field channels and land levelling in the command area of irrigation projects.	6,75,096	(hectares)
6. Area benefited through soil and water conservation and land reclamation	4,67,431	(hectares)
7. Rural roads constructed/improved	3,75,262	(kilometres)
8. School and *balwadi* buildings, *panchayat ghars*, community centres, *pinjrapoles*, *gaushalas*, community poultry and piggery houses, bathing and washing platforms, etc.	1,31,991	(numbers)
9. Other works	1,69,249	(numbers)

RURAL LANDLESS EMPLOYMENT GUARANTEE PROGRAMME

It was felt for some time that the hardcore of rural poverty, particularly pertaining to employment opportunities for the landless during the lean agricultural periods, when work is so scarce has to be tackled in a more direct and specific manner. Accordingly it was decided to launch a new scheme as Rural Landless Employment Guarantee Programme (RLEGP) from 1983-84 onwards.

The programme has two basic objectives : (i) to improve and expand employment opportunities for rural landless with a view to providing guarantee of employment to atleast one member of every landless labour household upto 100 days in a year; and (ii) creation of durable assets for strengthening the rural infrastructure which will lead to rapid growth of rural economy.

The Sixth Plan allocation for this programme is Rs 600 crore. An amount of Rs 100 crore were released to various state governments| union territory administrations for implementation of RLEGP during 1983-84. Budget provision for this programme during 1984-85 is Rs 400 crore. The programme is expected to generate about 600 lakh mandays of employment in 1983-84 and about 30 crore mandays during 1984-85. The programme is financed cent per cent by the Central Government. The Central assistance is distributed to the states|union territories on the basis of the same criteria as adopted in case of National Rural Employment Programme. The state governments are to prepare specific work projects within the allocation. Work projects relevant to Revised 20-Point Programme and Minimum Needs Programme can be taken up for implementation in rural areas under RLEGP. Wage component in a project is not to be less than 50 per cent of the total cost of the project. One kg of foodgrain per head per day is to be given as part of the wages, the balance being given in cash. The foodgrains to the workers are now given under the programme at subsidised rates as in case of NREP.

Work projects are required to be approved by the Central Committee on NREP|RLEGP set up in the Ministry of Rural Development. The agency for implementation of the programme is to be decided by the state government|union territory administration. So far 150 projects at estimated cost of Rs 467.38 crore have been approved under this programme for implementation in the various states and union territories.

INDUSTRIES, SERVICES AND BUSINESS COMPONENTS

The Industries, Services and Business Component (ISB) was built into the IRDP in February 1979 with the objective of maximising the employment opportunities in the secondary and tertiary sectors as the absorption capacity of the farm sector had almost reached a saturation point.

All persons selected under ISB are entitled to subsidies as per the IRD pattern. The maximum limit of subsidy is Rs 3,000. With effect from 2 October 1980 the IRDP has been extended to cover all the blocks in the country. The overall target of coverage is 600 families, belonging to the group of small and marginal farmers, agricultural labourers and rural artisans, who are below the poverty line. Out of these, 200 families are to be taken up under the ISB. On a rough estimate, about 10 lakh families will have to be covered under the component every year.

TRAINING FOR SELF EMPLOYMENT

The National Scheme of Training of Rural Youth for Self-Employment (TRYSEM) was initiated in August 1979 with the principal objective of removal of unemployment among youth. The main thrust of the scheme is on equipping rural youth with necessary skills and technology to enable them to take up self-employment. It is proposed to train about 2 lakh rural youth every year in various skills.

The strategy for training includes, apart from institutional training, through local servicing and industrial units, master-craftsmen, artisans and skilled workers. During the period of training, the trainees are also given financial assistance. They are also helped to prepare project reports which are converted into bankable schemes. They are helped to apply for bank loans and subsidies. Subsidies on the IRDP pattern with a maximum limit of Rs 3,000 per trainee is given in all areas excepting in DPAP areas where it is Rs 4,000. For tribal beneficiaries it is Rs 5,000.

RESEARCH AND TRAINING

The importance of training for rural development is being increasingly recognised. Major training programmes have been launched not only for acquainting government functionaries with the details of the rural development scheme but also to train the beneficiaries so that they develop awareness for such schemes and for effective delivery system.

National Institute of Rural Development

The National Institute of Rural Development, Hyderabad is an autonomous organisation engaged in conducting research and training programmes on all aspects of rural development. Training programme meet on-the-job requirements of functionaries involved in the rural development process. The Institute has been declared as the national IRD centre for Integrated Rural Development for Asia and the Pacific (CIRDAP), Comilla, Bangladesh.

Rural Technology

A Council for Advancement of Rural Technology (CART) has been set up as an autonomous organisation to develop and disseminate technology relevant for rural areas.

INSTITUTIONAL CREDIT

The Credit Division of Ministry of Rural Development liaise with the Ministry of Finance (Banking Division), the Reserve Bank of India and the National Bank for Agriculture and Rural Development (NABARD), to promote adequate and timely flow of credit for the implementation of the IRDP.

To assist 150 lakh families to cross the poverty line through IRDP, it was envisaged that Rs 3,000 crore of institutional finance would need to be mobilised during the Sixth Plan period. On the basis of reports received from the state governments, the year-wise mobilisation of institutional finance, per capita subsidy and per capita credit is given in table 16.1.

TABLE 16.1
MOBILISATION OF FINANCE

Year	Credit mobilisation	Per capita subsidy	Per capita credit
	Rs in crore	Rs	Rs
1980-81	289·04	582	1,060
1981-82	467·59	975	1,723
1982-83	713·98	1,041	2,066

A major development in the field of institutional finance for rural areas which took place in 1982 was the establishment of NABARD. On 12 July 1982 this Bank took over all the functions of Agricultural Refinance and Development Corporation (ARDC), alongwith certain functions of the Reserve Bank of India. As the NABARD has a much wider charter than the erstwhile ARDC, it is expected that this Bank will be able to play its role of financing rural development in an integrated manner. Unlike ARDC, NABARD is the refinancing institution for secondary and tertiary sectors in rural areas which constitute a very important thrust of the IRDP.

The Regional Rural Bank (RRB) plays a significant role in providing credit for the weaker sections in rural areas. As on March 1983 141 RRBs covered 227 districts in 21 states. The Sixth Plan envisages setting up of 170 RRBs covering 270 districts.

AGRICULTURAL MARKETING

The Directorate of Marketing and Inspection of the Ministry of Rural Development advises the Central and state governments on agricultural marketing problems. Its activities include (i) promotion of grading and standardisation of agricultural and allied commodities, (ii) statutory regulation of markets and market practices, (iii) training of personnel, (iv) market extension, (v) market research, survey and planning and (vi) administration of Cold Storage Order, 1980 and Meat Food Products Order 1973.

Grading and Standardisation

The Directorate of Marketing and Inspection enforces compulsory quality control before export on as many as 41 agricultural commodities. The total value of commodities graded for export during 1982-83 was about Rs 431.29 crore. The important commodities graded under *Agmark* for internal consumption include cotton, vegetable oils, *ghee*, creaming, butter, eggs, rice, wheat, *atta*, jaggery, *bura*, arecanut, curry powder, cumin seed, kangra tea, pulses, honey, ground spices table potatoes and fruits, etc.

To ensure the purity and quality of products graded under *Agmark*, 21 laboratories have been set up at Alleppy, Amritsar, Bangalore, Bhopal, Bhubaneswar, Bombay, Calcutta, Cochin, Guwahati, Ghaziabad, Guntur, Jaipur, Jamnagar, Kanpur, Kozhikode, Madras, Mangalore, Patna, Rajkot, Tuticorin and Virdhunagar alongwith Central Agmark Laboratory at Nagpur as the apex laboratory to provide necessary testing facilities. The Central and Regional Agmark Laboratories at Bombay, Calcutta and Madras are being strengthened further by the addition of biological testing units.

For securing prices commensurate with quality for the farmers, 60 agricultural commodities were graded before sale in 732 grading centres of different states|union territories at the end of March 1983. The total estimated value of the commodities graded at producer's level at these centres during 1982-83 was Rs 823.06 crore.

The Directorate has formulated grade specifications for 141 agricultural commodities.

Regulation of Markets

Regulation of markets is done by the state governments. The Directorate of Marketing and Inspection renders advice in framing market legislation and its enforcement. The number of regulated markets in the country at the end of March 1983 was 5,430.

The Directorate is extending financial assistance to selected regulated markets for providing grading facilities for important commodities like tobacco, jute, cotton, groundnut and cashewnut at the producers' level.

It is also implementing a scheme for providing central assistance for the development of infrastructural facilities in selected regulated markets both at primary and wholesale levels and the markets, situated in command areas, markets predominantly for commercial crops and terminal markets dealing in fruits and vegetables. Since the inception of the scheme in 1972-73, a total amount of Rs 15.57 crore has been provided as grants-in-aid to 444 selected regulated markets till 1983-84. Besides, under a new scheme which was started in 1977-78 to assist rural markets, grants-in-aid to the extent of Rs 26.09 crore has been provided for the development of 1,948 rural primary markets and 106 rural wholesale markets till 1983-84. The land norms prescribed under these schemes for grant of central assistance have been revised and sealed down in the light of the suggestions received from various states. It has been decided to consider all towns with a population of one lakh and above according to 1981 census as eligible for grant of a central assistance of Rs 15 lakh each for terminal markets for fruits and vegetables. A total of 316 towns have been identified for such assistance.

Market Research and Surveys

Under the scheme of market research and surveys, two programmes are being implemented, namely, (i) market research and planning and (ii) market planning and design. Under the former, the Directorate carries out countrywide market surveys on important agricultural and horticultural and livestock commodities to identify and study the problems of agricultural marketing. Survey of a number of wholesale markets for fresh fruits and vegetables has been carried out as a part of the activities of Market Planning and Design Centre to make suggestions for their development and improvement. The centre would study the packaging, grading and transport of selected fruits and vegetables and also advise the authorities on the designing of fruit and vegetable markets.

Cotton Classing Scheme

A cotton classing centre was established at Surat during 1969-70 as a pilot project to grade cotton lint. With the success of pioneer scheme, five more such centres were sanctioned—one each in Maharashtra (Nagpur), Karnataka (Raichur), Tamil Nadu (Tirupur), Madhya Pradesh (Khandwa) and Punjab (Abohar).

Cold Storage Order and Meat Food Products Order

The Cold Storage Order, 1980 is enforced by the Directorate to develop the cold storage industry in a planned manner, to ensure hygienic and proper refrigeration conditions and to render technical guidance for scientific preservation of foodstuffs. Upto 1983, 1,131 cold storages with a capacity of 9,26,418 metric tonnes were licenced under the order. Besides a large number of cold storages have been licenced by the state governments under their own Acts/Orders.

The Directorate also implements the Meat Food Products Order 1973 throughout the country to ensure quality control of meat food products for human consumption. Under the Order, the number of licences granted till April 1983 was 154.

Rural Godowns

Recognising the need for creation of additional storage capacity of 20 lakh tonnes at the village level over a period of five years, a special programme for establishing a national grid of rural godowns is in operation since 1979-80. This is being done through the co-operative societies, market committees and state warehousing corporations. The capacity of these godowns vary from 200 to 1,000 tonnes. The cost of construction of these godowns is met by 50 per cent subsidy shared equally between Central and state governments and 50 per cent by way of loans raised from the commercial banks|financial institutions.

These godowns will meet the storage requirements in respect of foodgrains and other agricultural produce including perishable commodities, prevent distress sale of foodgrains, reduce the pressure on transport system in the post-harvest period, bring the inputs within easy reach of small and marginal farmers, and reduce the losses in quality and quantity arising due to storage in substandard godowns. Till the end of 1983-84, construction of 2,956 rural godowns having storage capacity of 14,42,686 metric tonnes was approved.

LAND REFORMS

Land reform is a major instrument of economic and social change in rural India. Immediately after Independence, it was initiated for achieving the twin objectives of increasing agricultural production and promoting social justice. Land reforms is basically a state subject; laws for it vary from state to state to suit local conditions and requirements. All these variations, however, are within the parameters of a national consensus on the subject which is reflected in the national policy. The Government provides the guidelines from time to time and reviews the progress of implementation.

The objectives of the land reforms policy ever since the beginning of the planning process have been defined as the removal of such impediments to agricultural development as arise from the agrarian structure inherited from the past as well as to eliminate exploitation and social injustice within the agrarian system.

The principal measures adopted for achieving the objectives are : (i) abolition of intermediaries; (ii) tenancy reforms including regulation of rent, security of tenure and conferment of ownership rights on tenants as well as share-croppers; (iii) ceiling on agricultural holdings; (iv) updating and preparation of land records; and (v) consolidation of land holdings.

Abolition of Intermediary Tenures

By and large, all intermediary tenures like *zamindaries, jagirs, inams,* etc., which covered more than 40 per cent of the total area in the country at the time of Independence, have been abolished and over 2 crore cultivators brought into direct relationship with the state. Some of these tenures had their origin in the long past and their abolition paved the way for a modern agrarian structure.

Tenancy Reforms

Legislative measures have been taken for providing to the tenants security of tenure and regulating rent payable by them. The maximum rate of rent has been fixed at levels not exceeding one fourth to one fifth of the gross produce in all states except the Andhra area of Andhra Pradesh, Haryana and Punjab. Laws for conferment of ownership rights on tenants are being implemented in a large number of states. However, tenancy is still legally recognised in a number of states. Even in states where it has been abolished, exceptions have been made in the case of land owners who are members of the defence forces, unmarried women, minors, widows, and persons suffering from physical and mental disabilities. They are allowed to have their land under tenancy.

Land Ceiling Measures

Several states enacted land ceiling laws in the 50s and the 60s. As a result of this, nearly 30 lakh acres of land were taken over by the state. Out of this 21 lakh acres have so far been distributed. Later, in 1972, another series of land ceiling measures was started under the national guidelines for ceiling on agricultural holdings. Land ceiling laws have since been enacted by all the states in conformity with these guidelines. These laws are being implemented vigorously. Ninety eight per cent of the returns filed by landholders have already been disposed of. Forty three lakh acres have been found surplus. Nearly 30 lakh acres have already been taken over by the state and out of this area, more than 20 lakh acres have been distributed to 15 lakh families. Thus from the beginning of the programme started in 50s nearly 60 lakh acres of land have been taken over by the state and 42 lakh acres have been distributed.

Since land reform seeks to modify property relations among different sections of the society, it is a difficult task. The state has had to face stiff resistance from rich land-owners and other vested interests. Despite many legislative and administrative measures having been taken to insulate land reform cases from challenge in the court, parties have found ways of going to court, generally under its writ jurisdiction and have succeeded in stalling land ceiling proceedings. More than 15 lakh acres of land are locked in litigation now and are not, therefore, available for distributon. Besides this, much surplus land that has been taken over, has been found to be of poor quality. The Government has been regularly monitoring the progress in land distribution measures. The performance of each state is closely scrutinised, measures for improvement are suggested and for this purpose, the state governments are regularly consulted.

Financial Assistance to Beneficiaries of Ceiling Surplus Land

Since the beneficiaries of surplus land are all poor people and much of the surplus land need development so as to be capable of profitable cultivation, a scheme for providing financial assistance to them is being implemented since 1975-76. Assistance is given to assignees of surplus land to buy seeds, manure, fertilizer and other inputs so that they can cultivate their land during the first two agricultural seasons. Assistance is also given to them for simple land improvement measures like land shaping, contour bunding, etc. Steps are being taken now for dovetailing this scheme with different other programmes of rural development. Assistance under these programmes is to flow to the allottees of surplus land in such a co-ordinated manner as to ensure that the allottee can diversify his household economy and make a reasonable living from it round the year.

Consolidation of Holdings

Consolidation of holdings has been completed for all practical purposes in Punjab and Haryana and is nearly complete in Uttar Pradesh. Elsewhere it has not made much progress. Even so, in states, like Orissa, Bihar, Maharashtra and Himachal Pradesh, appreciable work has been done in certain selected areas. However, legislative provisions for consolidation have already been made in most of the states. Only for the Andhra Pradesh, Manipur, Tripura, Tamil Nadu and Kerala no such law exists. There is little room for consolidation in places like Arunachal Pradesh, Mizoram, Meghalaya and Nagaland. Most of the states which have enacted laws for consolidation provide for compulsory consolidation. Madhya Pradesh and West Bengal provide only for voluntary consolidation. An area of 5.10 crore hectares has been consolidated in the country till the end of October 1983. This constitutes 39.4 per cent of the cultivated land. With the increasing emphasis on raising the productivity of the soil, consolidation has assumed greater urgency than before. Efforts are being made to popularise the programme all over the country. While this is done, care is taken to see that the rights of tenants and sub-tenants are not jeopardised.

Land Records

Correct and up-to-date land records are an essential pre-condition for effective implementation of land reform measures, particularly provision of security of tenure for tenants and sharecroppers. It is also necessary to ensure smooth flow of credit and agricultural inputs to land holders, especially small and marginal farmers. Land records are fairly up-to-date in Andhra Pradesh, Haryana, Himachal Pradesh, Jammu and Kashmir, Gujarat, Punjab, Rajasthan, Kerala, Maharashtra, Madhya Pradesh, Uttar Pradesh and West Bengal. In most of the states, records are updated through the annual crop register. Revisional survey and settlement operations are being carried out in Andhra Pradesh, Assam, Bihar, Gujarat, Himachal Pradesh, Kerala, Madhya Pradesh, Meghalaya, Orissa, Sikkim, Tripura and West Bengal under the plans. The state governments have been urged to take all measures for updating land records with the utmost urgency.

INTEGRATION OF WOMEN IN RURAL DEVELOPMENT

A Centrally sponsored scheme for the development of women and children in rural areas is also being implemented during the current plan period in 51 selected backward districts on a pilot basis in collaboration with UNICEF. The scheme also seeks participation and involvement of voluntary agencies operating at the grass root level in various aspects of the scheme for its effective implementation.

PANCHAYATI RAJ

Since 1947, a number of states have statutory set-up village *panchayats*. *Panchayati raj* as a three-tier system of local self government representing the village, block and district levels was first set up in 1959. However, in several states the two-tier or even a one-tier system exists. The states design the structure of these institutions in the light of the local conditions.

Different tiers of the *panchayati raj* system are organically linked up. Special representation is given to interests like backward classes, women and co-operative societies. Elected directly by and from among villagers, the *panchayats* are responsible for promotion of agriculture, rural industries, provision of medical relief, maternity and child welfare, maintaining common grazing grounds, village roads, tanks, wells and provision for sanitation. In some places they also provide primary education and collect land revenue.

Coverage

Panchayati raj now covers all the states, except Meghalaya and Nagaland. Village *panchayats* exist in all the union territories except Lakshadweep and Mizoram. There are at present 2,17,319 village *panchayats,* 4,526 *panchayat samitis* and 297 *zilla parishads.*

Activities

The *panchayat,* the co-operative and the school are the basic institutions at the village level for carrying out programmes of rural development. The elected *panchayat* is responsible for many development programmes within its territorial jurisdiction. The village school, which is also a community centre, looks after the educational, recreational and cultural needs of the people. Associate bodies, such as organisations for women and the youth, farmers' and artisans' associations, work in co-ordination with the *panchayat* in order to perform various developmental activities.

Finance

The *panchayati raj* institutions have been statutory given authority for raising finance through taxation, levy of cess, etc. Thus they levy taxes on houses and certain types of lands, fairs, festivals and sale of goods as well as impose octroi duties. They also build up remunerative community assets.

The powers and responsibilities of the *panchayati raj* institutions are defined not only by law, administrative instructions issued by the state governments have also over the years, enlarged and clarified the roles and functions of the *panchayati raj* institutions. States like Gujarat, Maharashtra, Tamil Nadu and West Bengal have devolved upon these institutions the responsibility for performing a wide range of developmental activities.

Nyaya Panchayats

Nyaya panchayats or village courts, which provide a speedy and inexpensive system of justice to the villagers are functioning in some of the states.

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CIVIL SUPPLIES AND CO-OPERATION

CIVIL SUPPLIES

The Department of Civil Supplies is responsible for monitoring of prices and availability of essential commodities, administration of Prevention of Blackmarketing and Maintenance of Supplies of Essential Commodities Act, 1980, public distribution system, consumer protection and consumer co-operatives, integrated management of supply, prices and distribution of *vanaspati*, oilseeds, vegetable oils, cakes and fats, control of future trading and matters relating to weights and measures and of standards.

The Department is assisted by the Directorate of Weights and Measures; Directorate of Vanaspati, Vegetable Oils & Fats; Indian Standards Institution, New Delhi; Forward Markets Commission, Bombay; Trade Marks Registry, Bombay and Hindustan Vegetable Oil Corporation Ltd., New Delhi.

PRICE MANAGEMENT

There has been some pressure on the prices during 1983-1984, mainly due to the continued effect of the severe drought in 1982.

The wholesale price index, during April 1983-February 1984, moved up by 9.5 per cent. Much of this increase (8.4 per cent) took place during April 1983-September 1983 which generally coincides with the lean period. This works out to less than 1 per cent a month on an average. In the next five months *i.e.* October 1983-February 1984, the general price level moved up by 1 per cent which means 0.2 per cent per month on an average. In February 1984, the annual rate of inflation (on a point to point basis) was 10.5 per cent as compared to 6.2 per cent in March 1983.

A commodity-wise analysis shows a mixed trend. The price index of cereals declined by 3.1 per cent during the period April 1983-February 1984 with substantial fall in the price indices of wheat, *bajra* and maize. However, there has been some increase in the prices of pulses. The prices of edible oils in general have been under pressure during the year following shortfall in the production of oilseeds during 1982-83. However, large imports of edible oils and increased distribution through the public distribution system have helped in keeping the price rise under check. The prices of vegetables rose substantially during the lean period which extended upto November 1983, but have thereafter come down to normal seasonal level. Suitable action was initiated to contain the price rise in respect of some other commodities like tea and *gur*.

The consumer price index for industrial workers moved up by 0.7 per cent in January 1984 over December 1983. During the period April 1983-January 1984, the consumer price index moved up by 12.2 per cent compared to 8.3 per cent in the same period in 1982-83.

ESSENTIAL COMMODITIES

Production

The production of foodgrains in 1982-83 was 12.83 crore tonnes compared to 13.33 crore tonnes in 1981-82, showing a decline of 3.7 per cent. The fall was due to decline in the production of cereals from 12.18 crore tonnes to 11.68 crore tonnes. The production of pulses in 1982-83 was marginally higher at 1.16 crore tonnes as compared to 1.15 crore tonnes in 1981-82. This has been mainly due to increase in the production of gram. Wheat production reached a new peak of 4.25 crore tonnes. The prospects for 1983-84 crop are very good. The *kharif* crops of 1983 have been generally much higher than that of last year in respect of rice and groundnut. The prospectus for the *rabi* crops of 1984 also are very good.

The production of various mass consumption manufactured products in the organised industrial sector in the first nine months (April-December) of 1983-84 was generally higher as compared to the same period in 1982. These included cotton cloth, fluorescent tubes, cement, biscuits, soap, soda ash, tooth powder, razor blades, leather footwear, bicycle tyres and certain drugs. There was, however, a decline in the production of certain items like salt, dry cells, baby food, synthetic detergents and some drugs.

Availability

There was marked improvement in the availability of wheat, gram, sugar, *khandsari, vanaspati* and cement. During the lean summer months the availability of rice, *gur,* some edible oils and onions became tight. But with the arrival of *kharif* crops, their supply position eased. The availability of most of the manufactured commodities and items of mass consumption has been generally satisfactory. Despite increased supply there were, however, reports of temporary shortage of localised nature in respect of items like kerosene and soft coke, particularly during the winter season. The management of supplies of essential commodities has been further strengthened and improved resulting in fairly easy availability of essential commodities like sugar, edible oils and *vanaspati* during the festival season.

Measures to Improve Availability

Increasing the production and improving the management of supplies of various essential commodities has continued to be the major thrust of Government policy. A number of measures were taken to increase the production, improve the availability, strengthen the supply management and keep in check the prices of essential commodities. Some of the important measures taken are :

(a) The support|procurement prices of various agricultural commodities were raised further to encourage increased production and productivity.

(b) A number of programmes for stepping up the production of oilseeds and pulses are being implemented under the Sixth Plan.

(c) The domestic production of essential commodities in short supply was supplemented by imports as in the case of cereals, pulses, edible oils and petroleum products.

(d) The public distribution system is being strengthened and expanded under the Revised 20-Point Programme to intensify the coverage in the country, particularly, in the rural areas as well as the backward, remote and inaccessible areas.

(e) During 1983, the off-take of foodgrains from the Government stocks was 1.62 crore tonnes as against 1.47 crore tonnes in 1982, showing an increase of 9.9 per cent.

(f) The monthly releases of levy sugar have been raised from 2.94 lakh tonnes to 3.13 lakh tonnes since October 1983. The releases of free sale sugar was also stepped up. The off-take of free sale sugar amounted to 28.93 lakh tonnes during 1983 as compared to 25.71 lakh tonnes in 1982, showing an increase of 12.5 per cent.

(g) The supply of imported edible oils through the public distribution system was stepped up from 4.51 lakh tonnes during 1982 to 6.05 lakh tonnes during 1983, showing an increase of 34.1 per cent. The increased allocation since April 1983 was made in the wake of severe pressure on the prices of indigenous edible oils. The allocations are being maintained at higher levels. The imports of edible oils during the oil year 1982-83 (November-October) were higher by 15.5 per cent over the imports in the oil year 1981-82.

(h) The supply of imported edible oils to the *vanaspati* industry was also stepped up. The 'second window' for supplies of additional quantity of imported edible oils to the *vanaspati* industry was opened in June 1983 while in 1982-83, it was opened in August. Under this arrangement, additional imported edible oils is allocated to the *vanaspati* industry at a higher price of Rs 12,000 a tonne as against the supply at Rs 8,500 a tonne in the normal course.

(i) The small packs scheme for supply of imported edible oils through the public distribution system which was earlier introduced in the metropolitan cities of Delhi, Bombay, Calcutta and Madras has since been extended to 36 cities. It is being further extended both in terms of coverage of centres as well as quantum of oils supplied.

(j) The sale of kerosene during 1983 amounted to 53 lakh tonnes as against 50.35 lakh tonnes in 1982 showing an increase of 5.3 per cent which is commensurate with the policy of the Government to increase the supply of kerosene under the public distribution system. Of late, there has been a switchover from the consumption of soft coke to that of kerosene for domestic purposes. This has, therefore, resulted in lower despatches of soft coke during the current year as compared to the previous year.

(k) The network of consumer co-operatives is being expanded and developed in order to support the public distribution system in the country. The main thrust continues to be towards the establishment of retail outlets, as far as feasible, in the co-operative sector to serve the weaker sections of the society and consolidation of the existing structure of consumer co-operatives by making them financially more viable.

(l) The state governments are being advised from time to time to vigorously enforce the provisions of the Essential Commodities Act and similar other legislations including price display orders and storage control orders to curb the activities of black marketeers, hoarders and other anti-social elements.

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easures

In the complex economic system as prevailing today, a certain legislative protection is necessary to safeguard the interests of the consumers. The Government has taken various measures to achieve this objective.

The main legislation governing the production, procurement, price control and distribution of essential commodities is the Essential Commodities Act, 1955. As some of the existing provisions of the Act were considered not adequate or effective in quick disposal of cases, or otherwise to deter the activities of the anti-social elements indulging in blackmarketing, hoarding, etc., the Government amended the Act by enacting the Essential Commodities (Special Provisions) Act, 1981. The amending Act made the penal provisions of the Essential Commodities Act, 1955 more stringent including provisions for summary trial for all offences under the Act. The amending Act is effective from 1 September 1982.

During 1983 the Enforcement Directorate set up under the Act carried out 2,18,120 raids throughout the country. This led to the seizure of goods worth Rs 1,335.22 lakh. The number of persons arrested following the raids were 9,061. Five hundred and thirteen persons were convicted and 4,171 persons faced prosecution.

To check the trend of increasing prices and artificial scarcity of commodities sought to be created by unscrupulous traders, an Ordinance was promulgated on 5 October 1979, namely the Prevention of Blackmarketing and Maintenance of Supplies of Essential Commodities Ordinance, 1979, providing for preventive detention of persons with a view to detering them from acting in any manner prejudicial to the maintenance of supplies of commodities essential to the community. The ordinance was replaced by an Act of Parliament in February 1980. The Act was amended in 1982 to empower the District Magistrates/Commissioners of Police to take expeditious action against absconding persons. Since this Act came into force, 701 persons were ordered to be detained till 31 December 1983. In 1983 alone 105 persons were ordered to be detained.

UBLIC
ISTRIBUTION
YSTEM

A public distribution system has been functioning in the country covering the rural and urban areas. It has been made an integral part of the socio-economic structure of the country. At the beginning of 1983, there were 2.84 lakh fair price shops for distribution of certain essential commodities to the consumers. As on 1 October 1983, the total number of fair price shops in the country was about 2.97 lakh. The commodities supplied for distribution by the Government are wheat, rice, sugar, imported edible oils, softcoke and controlled cloth. These commodities are being procured and supplied to the states by certain designated public sector and co-operative agencies, such as the Food Corporation of India, the State Trading Corporation of India, Coal India Ltd., various petroleum companies and the National Co-operative Consumers' Federation. The state governments have been given the option to include for issue to the consumers, any other commodity considered by them as essential for mass consumption, by arranging for its procurement on their own through agenices nominated by them. Thus, some state governments are also distributing items such as pulses, *vanaspati,* cycle tyres and tubes, torch cells, soap, etc.

The functioning of the public distribution system is kept under constant review by the Government in consultation with the state governments/union territory administrations. As a result of this, corrective measures, wherever necessary, are taken from time to time to improve the supply of various essential commodities to the consumers. The organisation and administration of the public distribution system within their respective territories is primarily the responsibility of the state governments|union territory administrations. The latter seeks to ensure that the commodities are supplied in time to the retail outlets of the system and are distributed to the consumers at pre-determined price. The Government is supplying such essential commodities to the state governments at central issue prices, which are also subsidised in certain cases. The state governments are authorised to add to the issue prices, certain incidental charges like transportation and local taxes, etc., in fixing the end-retail price, paid for each commodity by the consumers.

The consumer co-operatives in urban areas and the primary agriculture credit societies in the rural areas are also being strengthened with Central assistance for stepping up consumer distribution activity in a larger way, especially to cover remote and inaccessible areas and weaker sections of the community. The Sixth Plan envisages that co-operative should play a much bigger role in the distribution system so that over a period of time, the entire network of retail outlets under the public distribution system could be run by them.

Under the Revised 20-Point Programme the expansion of the public distribution system has been made an important point of action. This is to include opening of mobile shops in far-flung areas and also shops to cater to industrial workers, students hostels, etc.

An Advisory Council on Public Distribution has been constituted at the centre to periodically review the functioning of the system. The state governments and union territory administrations have also been advised to constitute consumer advisory committees at the state and field levels to oversee the functioning of the public distribution system.

CONSUMER CO-OPERATIVES

Consumer co-operatives are being developed both in urban and rural areas, to function as the main channel of public distribution system and to make available quality goods at reasonable rates. In urban areas, a four tier structure consisting of the national federation. state federations, central|wholesale stores at the district level and primary stores at the base level has been built up over the years. In rural areas, the lead and link societies make available controlled and non-controlled consumer articles to villagers. The National Consumer Co-operative Federation (NCCF) is the apex level organisation engaged in bulk procurement of essential commodities and their supply to affiliated organisations throughout the country. The other structure as on 30 June 1983 consisted of 15 state co-operative consumer federations, 7 state co-operative marketing-cum-consumer co-operative federations, 590 central/wholesale consumer societies at the district level and 18,690 primary consumer co-operatives at the base level.

The NCCF is dealing both in controlled and non-controlled textiles, general merchandise and a number of grocery items. The federation is also running consumer industries such as production of exercise books and processed spices and marketing tea and certain varieties of textiles, razor blades, etc., under their own brand name. The annual sales turn-over of NCCF during 1982-83 was Rs 140.45 crore as against Rs 126.69 crore in 1981-82.

The NCCF has set up a consultancy and promotional cell (C&P Cell) with the Government assistance for providing expert management services to the consumer co-operatives in the country. The cell has its head office in Delhi and three regional offices at Calcutta, Madras and Ahmadabad.

Under the Centrally sponsored scheme for development of consumer co-operatives in urban areas, liberal financial assistance is provided to state federations for expansion and diversification of business, setting up branches-cum-distribution centres as well as for setting up consumer industries. The central/wholesale consumer co-operative societies are assisted to open large|small sized retail outlets as well as departmental stores. Assistance for establishing common kitchen centres for students in colleges|universities is also provided. The state federation and good working wholesale stores are encouraged to open regional distribution centres for a given region. It has now been decided to provide assistance to wholesale stores in towns with more than 8 lakh population and turn-over of over one crore rupees per annum, for mobile vans shops to cater to the weaker sections of the population, industrial and building workers living in the outskirts of cities. Assistance is also provided to weak|sick wholesale|central stores (and State Federations in eastern and north eastern states) for rehabilitation so that the sick units can be revived. During 1982-83, the urban consumer co-operatives (wholesale and primary stores) attained a sales turn-over of Rs 1,194 crore against Rs 1,167 crore during 1981-82.

The scheme of strengthening the primary|agricultural marketing societies to undertake consumer business in rural areas with financial assistance from National Co-operative Development Corporation (NCDC) has been in operation since 1976. The efforts of NCDC in that direction were supplemented by introduction of a Centrally sponsored scheme in 1978 for providing margin money assistance to village societies to increasingly involve such societies in the distribution of consumer articles in rural areas. So far 2,521 lead societies and 43,296 link societies have been assisted under the NCDC and Centrally sponsored schemes. The retail business handled by village co-operatives in rural areas during 1982-83 was estimated to be Rs 1,150 crore as against Rs 1,066 crore during 1981-82.

CONSUMER PROTECTION

In order to safeguard the interests of the consumer in the matter of quantity, quality and price, the existing laws dealing with the various aspects of consumer protection are reviewed from time to time. In addition, steps are taken to create awareness among the consumers so that they may assert to establish for themselves the right to physical and economic safety, the right to be informed, the right to choose and the right to be heard. For this purpose, the Department operates a scheme under which financial assistance is provided to voluntary consumer organisations for selected projects such as publications concerning consumer affairs, consumer education and complaint cell, laboratory for testing consumer items and seminars workshops, etc.

The Consumer Protection Division has been strengthened (i) to have constant review of trade practices with a view to spotting out unhealthy trends in the economy that militates against the interests of the consumer; (ii) to formulate proposals for legislative and administrative measures to curb the growth of unfair trade practices; (iii) to ensure effective implementation of the weights and measures laws and of the statutory rules relating to packaged commodities; (iv) to encourage and motivate voluntary consumer organisations with a view to giving further momentum to the consumer protection movement; (v) to undertake surveys in the areas of consumer interest, and give guidance and advice to the manufacturers and traders; and (vi) to collect and disseminate information on matters relating to consumer protection and to provide guidelines and advice to the consumer organisations and the public in general.

A Consumer Protection Council has been constituted with a view to give a higher direction and purpose to the consumer protection movement in the country. The Council will advise the Government on all matters having a bearing on the interests of the consumer.

Standardization and Quality Control

The Indian Standards Institution (ISI), the national standards body for India was established in January 1947. The aims and objects of the Institution comprise preparation of national standards and their promotion for general adoption, recommendations to Government on standards for units of measurement; promotion of standardization and quality control in industry; operation of ISI certification marking scheme and undertaking circulation of statistics and other information relating to standards.

The powers to grant licences to manufacturers within the country to use the ISI standard mark as a mark of conformity to relevant standards were conferred statutorily on the Institution by the promulgation of the Indian Standards Institution (Certification Marks) Act, 1952.

The Institution has the active assistance of over 37,000 committee members drawn from all over the country representing industries, educational and research institutions, testing laboratories, user organisations, government representatives, etc. The task of formulating standards is organized through its 11 technical divisions operating under the guidance of corresponding Division Councils. So far, nearly 12,000 Indian Standards on various subjects have been formulated and presently about 800 standards including revisions are being issued every year.

In the area of certification marks, 7,492 licences were operating as on 31 March 1983 covering 4,547 industrial units against about 1,150 Indian Standards. On an average about a thousand new licences for certification are issued each year presently.

A large number of public and private laboratories in the country are being used in the testing programme, ISI has too established its own net-work of testing laboratories at Delhi (Sahibabad), Bombay, Calcutta, Madras, Chandigarh (Mohali) and Patna.

ISI has established close liaison with national standards bodies of all the other countries and is closely associated with the International Standards Organization (ISO) and International Electrotechnical Commission (IEC) both in their technical work and in their policy planning.

ISI has been rendering assistance to a large number of developing countries in training standards engineers under the various international fellowship schemes. India has also rendered technical guidance to set up standardization organizations in a number of developing countries.

STANDARDS OF WEIGHTS AND MEASURES

One of the important reforms heralded in the country after Independence was the unification of the system of weights and measures by the introduction of metric system. The Standards of Weights and Measures Act, passed by Parliament in 1956 established a uniform system of weights and measures for the first time in the country. The Act provided for institutional infrastructure to ensure that proper checking and verification of weights and measures used in commercial transactions is undertaken periodically so that the consumer is assured of accuracy in transactions. The Directorate of Weights & Measures functions as a nodal point for all activities relating to weights and measures administration as well as for organising and guiding consumer awareness programmes.

The metric system has been adopted in almost all the sectors of the economy. Enforcement machineries for legal control on weights and measures have been created in all the states and union territories.

In order to introduce the International System of Units—the modernised and developed form of the metric system—and to bring the laws in line with international recommendations adopted by the International Organisations of Legal Metrology (OIML), the Standards of Weights and Measures Act, 1976 was enacted. The enforcement is done by state governments/union territory administrations in accordance with their own laws.

The provisions of the Standards of Weights and Measures Act, 1976 relating to regulation of packaged commodities together with relevant rules were notified for implementation from September 1977. The important provisions in the rules intended for consumer protection include declaration of (i) the name and address of the manufacturers/packers, (ii) name of the commodity, (iii) the net weight or measure, (iv) the month and year of packing and (v) the sale price. The rules also stipulate that the packages should be of standard quantities which would enable consumer to calculate unit prices easily.

The Indian Institute of Legal Metrology, Ranchi imparts training to the personnel in weights and measures organisations of the states/union territories. The institute is the only one of its kind in the south and the south-east Asia. It attracts trainees from developing countries also.

Regional Reference Standard Laboratories working at Ahmadabad and Bhubaneswar, verify standards used in the states' weights and measures laboratories.

The National Physical Laboratory, New Delhi, is responsible for the realisation, establishment, custody, maintenance and updating of national standards of weights and measures.

Government of India Mint, Bombay, has been made responsible for the manufacture of reference, secondary and working standards. The Mint caters to the needs for standards of several other countries in the region.

Regulation of Forward Contracts

The Forward Markets Commission, set up under the Forward Contracts (Regulation) Act, 1952 is a statutory organisation responsible for the administration and enforcement of this Act. It regulates forward trading in various commodities to which the regulatory provisions of the Act have been applied through associations recognised at selected centres for such trading. It takes action to curb unhealthy speculation in such regulated forward markets. It also keeps a watch over the price trends of a number of commodities including certain essential commodities. It assists the state governments in the enforcement of the Government's policy regarding prohibition or suspension of forward trading in any commodity. The Commission has its head office at Bombay with branch office at Calcutta.

During 1983, future trading continued under regulation through recognised associations in (i) pepper at Cochin and Bombay (ii) turmeric at Sangli and (iii) *gur* at Hapur, Muzaffarnagar, Delhi Bhatinda, Amritsar, Ludhiana, Gwalior, Kanpur and Rohtak. Future trading in jute sacking was banned after 27 August 1983. TSD contracts and NTSD contracts were permitted in raw jute and jute goods under the auspices of the recognised association at Calcutta. NTSD contracts of limited duration continued to be permitted in cotton of different descriptions under the auspices of the recognised associations at Bombay, Ahmadabad, Bhatinda, Surat, Bharuch, Surendranagar, Ujjain, Guntur and Coimbatore. NTSD contracts in groundnut and groundnut oil were resumed in 1983.

The Commission takes action against illegal forward trading in oilseeds, cotton, jute and jute goods, etc. It organises training courses to acquaint the state police authorities with the nature, *modus operandi* and other related aspects of offences under Forward Contracts (Regulation) Act, 1952.

Registration and Use of Trade Marks

The Trade & Merchandise Marks Act, 1958 provides for the registration and better protection of trade marks and for the prevention of the use of fraudulent marks on merchandise. The Trade Marks Registry is the statutory organisation set up for the administration of the Act. It works under the Controller-General of Patents, Designs and Trade Marks, who is the Registrar of Trade Marks for the purpose of the said Act. The Registry has its head office at Bombay, with branch offices at Calcutta, Delhi and Madras.

VANASPATI, VEGETABLE OILS AND FATS

The Directorate of Vanaspati, Vegetable Oils and Fats, set up under the Department of Civil Supplies in November 1976, has the responsibiliy at the field level, for the co-ordinated management of the edible oils economy including price, quality control, production, supply and distribution for the internal trade and commerce of *vanaspati, vegetable* oils, oil cakes and meals.

Vanaspati Industry

The *vanaspati* industry which came into existence in 1930, with a nominal production, has made rapid strides achieving production of about 8.9 lakh tonnes in 1983. The licensed capacity of the industry is about 14.20 lakh tonnes pertaining to 92 units. Part of this capacity is also utilised for the manufacture of margarine, bakery shortening, refined oils for direct consumption and industrial hard oil for soap making, etc.

Solvent Extracted Oils

The number of solvent extracted oil factories in the country is 392 with an annual installed capacity of about 6.46 lakh tonnes in terms of oils and 92.37 lakh tonnes in terms of oilcakes. The total production of all types of solvent-extracted oils in 1983 was 2.96 lakh tonnes.

Expeller Oils

The number of oilseeds crushing units in the organised sector is around 230 and their annual capacity is of the order of 50 lakh tonnes in terms of oilseeds. No reliable estimates about the number of units in the unorganised sector are available. Their number is estimated to be well over one lakh and the capacity is around 180 lakh tonnes.

CO-OPERATION

The co-operative idea took a concrete shape in India for the first time in 1904, when the Co-operative Credit Societies Act—a measure designed to combat rural indebtedness and to provide for registration of credit societies—was passed. Later, in 1912, the Co-operative Societies Act also provided for registration of non-credit societies as well as federations of co-operatives. Since then, the co-operative movement has made noticeable progress, specially in the field of agricultural credit, marketing and processing of agricultural produce, supply of farm inputs and distribution of consumer goods. By the end of June 1982, there were 2·88 lakh co-operatives in the country, of which about 65 per cent were operating in the rural areas, largely engaged in serving the farmers, landless labourers and other sections of the rural population.

The salient features and operational dimensions of the co-operative movement in India for selected years between 1960-61 and 1981-82 are given in table17·1.

TABLE 17.1
GROWTH OF CO-OPERATIVES

	1960-61	1970-71	1975-76	1980-81	1981-82
Number of Societies (lakh)	3.3	3.2	3.1	2.99	2.88
Membership of Societies (lakh)	352	644	848	1,062	1,149
Share Capital (Rs crore) .	222	851	1,529	2,088	2,100
Working Capital (Rs crore) .	1,312	6,810	12,432	20,021	21,000

A study of the data in table 17.1 shows that between 1960-61 and 1981-82 a period of 21 years the membership of co-operative societies increased by more than three times, the share capital of all types of co-operatives increased by more than nine times and the working capital by more than fifteen times.

Primary Agricultural Credit Societies

By far the largest number of societies were in the agricultural credit sector. At the end of June 1982, there were 94,628 primary agricultural credit societies covering more than 96 per cent of the rural areas. The membership of these societies was 6.07 crore as on 30 June 1982. Universal membership has now been accepted as the policy so far as the primary agricultural societies are concerned, so that the people belonging to the weaker sections could become members of the co-operatives and avail of their services. The societies had a share capital amounting to Rs 598.23 crore in June 1982 and short-term agricultural lending amounting to Rs 1,707 crore during 1981-82.

Marketing and Processing Co-operatives

The co-operative marketing structure consists of about 4,003 co-operative marketing societies covering all important agricultural markets in the country–380 districts/regional marketing societies including 208 sugarcane supply marketing societies and cane unions, 31 state level co-operative marketing federations and one National Agricultural Co-operative Marketing Federation. The total value of agricultural produce marketed by co-operatives amounted to about Rs 2,300 crore in 1981-82. The value of foodgrains handled by marketing co-operatives increased from about Rs 220 crore in 1968-69 to about Rs 650 crore in 1981-82. During 1982-83, the National Agricultural Co-operative Marketing Federation's turnover stood at over Rs 105.79 crore, as against Rs 30.53 crore in 1976-77.

The structure of processing units established in the co-operative sector conforms to two distinct patterns, namely, (a) units established by independent processing societies, and (b) units established as adjuncts to co-operative marketing societies. Under the first category fall the larger units, such as, co-operative sugar factories, spinning mills and solvent extraction plants. Medium and small units, such as rice mills, oil mills, cotton ginning and processing units, jute baling units, mostly fall under the second category. Of the 2,441 units organised during 1982-83 in the co-operative sector, 2,004 units were installed of which 245 units were large and medium sized industry like sugar mills, spinning mills, solvent extraction plants, jute mills, etc. During 1982-83 sugar season, 156 co-operative sugar factories were in production. They produced 45.35 lakh tonnes of sugar accounting for 55 per cent of the country's total production of sugar. At the national level, the National Federation of Co-operative Sugar Factories renders advice and maintains a technical cell.

Storage

The National Co-operative Development Corporation is responsible for planning, promoting and financing the programme of augmenting storage capacity of co-operatives at various levels. Storage capacity of over 65 lakh tonnes had already been constructed in the co-operative sector by the end of June 1983 as against a capacity of 8 lakh tonnes in 1960-61. By June 1983 as many as 32,058 rural godowns and 5,799 marketing godowns had been constructed. During 1982-83, 138 co-operative cold storage units with a total capacity of 2.81 lakh tonnes were installed. The Corporation has launched a large programme for construction of over 20,000 godowns with a capacity of nearly 37 lakh tonnes in 10 states and also 127 cold storages in five potato-growing states with assistance from the European Economic Community and International Development Association.

Industrial Co-operatives

Co-operatives occupy an important place in the field of village and small industries and handloom weaving. As on 30 June 1979, there were 45,458 industrial co-operatives with a membership of 22.88 crore. During 1978-79, sales of primary societies were of the order of Rs 272.7 crore.

The National Federation of Industrial Co-operatives, which was set up with a view to assist in the marketing of products of member societies, make efforts to consolidate and strengthen its position.

Co-operative Spinning Mills

The total number of spinning mills organised and installed in the co-operative sector was 225 and 66 respectively by 1982-83. Of the 66 installed mills, 29 are growers' mills and 37 are weavers' mills. During 1982-83, the number of installed spindles in the co-operative sector was 16 lakhs.

The spinning mills have organised at the national level, the All India Federation of Co-operative Spinning Mills Ltd. The federation is a promotional and developmental organisation.

Supply of Agricultural Inputs

To help farmers, co-operatives in India play a significant role in the production and distribution of agricultural inputs. Nearly 47 per cent of the total fertilizers distributed in the country are sold through the co-operative distribution system. The co-operatives have also diversified their activities in recent years to cover new lines of business.

IFFCO

The Indian Farmers Fertilizer Co-operative Ltd. (IFFCO), is a unique co-operative venture in the field of large scale fertilizer manufacture. It is one of the leading producers of fertilizers in the country, its share in the national production being 13 per cent in terms of nitrogen and 29 per cent in terms of phosphates. Registered in 1967, with the support of co-operatives in the country and the Government with the objective of manufacturing and marketing fertilizers for the benefit of farmer members of affiliated co-operatives, the membership of IFFCO covers about 26,000 co-operative institutions ranging from the national level federations to the village level co-operatives in 16 states and 3 union territories. It has ammonia and urea plants at Kalol (Gujarat) and a NPK complex fertilizer plant at Kandla.

IFFCO has set up a naphtha based ammonia and urea plant at Phulpur near Allahabad designed to produce 900 tonnes per day of ammonia and 1,500 tonnes per day of urea, respectively. The plant went into production in March 1981.

IFFCO's marketing strategy revolves around selling the concept of modern farming technology instead of just the fertilizer alone. For this purpose, it operates through field force of more than 300 trained agricultural technologists who function at the grass root level in the villages and lay down practical demonstrations in the use of balanced fertilizers, improved seeds and other inputs as also in the soil testing and in obtaining credit from the co-operative societies.

FUNCTIONAL CO-OPERATIVES

Functional co-operatives for programmes like dairy, fishery and poultry mainly relate to the service of weaker sections. Such co-operatives provide increased employment and income opportunities to different sections of the community like small and marginal farmers and fishermen. The National Co-operative Development Corporation (NCDC) gives financial assistance to various types of co-operatives.

Dairy Co-operatives

On 31 December 1978, out of a total of 190 dairy plants in operation in India, 80 were in the co-operative sector. On 30 June 1982, there were 31,395 primary milk supply co-operatives with a membership o 29.51 lakhs. During 1981-82, the co-operatives handled milk and milk products valued at Rs 306 crore. The primary milk co-operatives are federated into 203 unions. A National Federation of Dairy Co-operatives was set up in 1970.

Fishery Co-operatives

The organisational structure of fishery co-operatives normally consists of primary fishery co-operatives at the base. A super-structure of federation of primary fishery co-operatives has been built up. This consists of district and central federations and state level federations. An All India Federation of Fishermen's Co-operative was set up during 1979-80. In June 1982, there were 4,923 primary fishermen's co-operatives with a membership of 5.46 lakh.

Poultry Co-operatives

By the end of June 1981, there were over 1,437 primary poultry co-operatives with a membership of 1,01,780.

Multi-Purpose Tribal Co-operatives

As part of the programme of economic development of tribals, primary co-operatives in tribal areas are being reorganised to enable them to function as multi-purpose societies. State level co-operative tribal development corporations|federations have been established in Andhra Pradesh, Bihar, Madhya Pradesh, Maharashtra, Rajasthan, West Bengal and Orissa to serve as apex organisations for marketing of minor forest produce and consumer goods.

Labour contract and construction co-operatives have been organised with a view to providing employment at reasonable wages to their members and preventing their exploitation by the contractors. During 1981-82, there were 15,757 labour co-operatives and forest labour co-operatives with a membership of 10.18 lakh.

The number, membership and working capital of selected primary non-credit societies during 1981-82 are shown in table 17.2.

TABLE 17.2
PRIMARY CO-OPERATIVE SOCIETIES

Type of Societies	Number	Membership (in 000)	Working capital (Rs in lakh)
Milk Supply Societies.	31,395	2,951	9,926
Poultry Co-operative Societies.	1,437	101	14,235
Fishery Societies.	4,923	546	2,507
Forest Labour Societies.	1,369	249	8,571
Labour Contract and Construction Societies.	14,398	770	5,054

Training and Research

A three-tier well-organised structure of co-operative training is available in India. It consists of a national institute of co-operative management known as Vaikunth Mehta National Institute of Co-operative Management (VMNICM), Pune, for catering to the training requirements of senior personnel, a network of 17 co-operative training colleges for training of intermediate personnel and 86 co-operative training centres for training of junior personnel. The VMNICM and 17 co-operative training colleges situated at state headquarters are functioning under the administrative and financial control of the National Council for Co-operative Training of the National Co-operative Union of India, which is financed entirely by the Government

Co-operative centres for training of junior category personnel are functioning under the control of state co-operative unions and state governments.

National Level Co-operative Federations

A major development over the past one decade has been the emergence of national co-operative federations, which have added a new dimension to the co-operative infra-structure. With National Co-operative Union of India at the apex, the other national level co-operative organisations include the National Agricultural Co-operative Marketing Federation, the All India State Co-operative Banks Federation, the National Federation of Co-operative Sugar Factories, the National Co-operative Land Development Banks Federation, the National Co-operative Consumers' Federation, the National Federation of Industrial Cooperatives, the All India Federation of Co-operative Spinning Mills, the National Co-operative Housing Federation, the National Co-operative Dairy Federation of India, the National Federation of Co-operative Urban Banks and Credit Societies and the All India Federation of Co-operative Refinery Societies.

18 ENERGY

Energy in one form or another enters practically every single economic activity and its availability and cost decides the economic future and well being of the nation. The requirement of energy in India is, as in many developing countries, met from a variety of forms *e.g.*, fire wood, animal dung, agricultural wastes, electricity, nuclear fuels, oil and coal. While the non-commercial forms of energy meet the bulk of the rural energy demands, the most convenient commercial energy sources are coal, oil and electricity.

Recognising the growing need for energy and for its over-all economic development, a new Ministry of Energy was created in October 1974 comprising the Departments of Power and Coal. This Ministry was given the responsibility for general policy in the field of energy and development of coal and power sectors. Subsequently, Department of Petroleum also became part of Ministry of Energy. Considerable work is being done on alternate sources of energy all over the world and in India too a number of projects have been taken up with a view to take up research and development and promote non-conventional sources of energy which were hitherto either unknown or were not economical and popular. The Department of Non-Conventional Energy Sources was established in September 1982 under the Ministry of Energy to formulate the policies and programmes for development of new and renewable sources of energy and also to co-ordinate and intensify research in this field. With this it is expected that the pattern of energy generation and consumption will change in the coming decades. The Government had appointed the Fuel Policy Committee in 1970 to recommend the outline of the longterm national fuel policy. Based on the recommendations of the Committee and subsequent developments, a comprehensive energy policy has been formulated. The main thrust of the policy is towards development of indigenous sources of energy with a view to achieve self-sufficiency, conservation of energy and elimination of wasteful uses.

POWER

Electricity is the most convenient and versatile form of energy. The demand for it, therefore, has been growing at a rate faster than other forms of energy. Power industry, too, has recorded a phenomenal rate of growth both in terms of its volume and technological sophistication over the last few decades. Electricity plays a crucial role in both industrial and agricultural sectors, and, therefore, the consumption of electricity in the country is an indicator of productivity and growth. In view of this, power development has been given high priority in the development programme.

The pattern of electricity consumption during the last decade is indicated in table 18.1.

ABLE 18.1
ATTERN OF
LECTRICITY
ONSUMPTION

in trillion watt hour (TWH)

	Industrial	Transport	Agriculture	Domestic Commercial and Services	Total Consumption
1970-71 . .	34·33	1·37	4·47	8·29	48·46
1975-76 . .	43·38	1·85	8·72	12·13	66·08
1980-81 . .	55·74	2·33	14·41	17·33	89·81
1981-82 . .	59·68	2·74	16·23	20·57	99·22
1982-83 . .	61·33	2·67	17·29	21·93	103·72

Although power development was initiated in India as early as 1900 with the commissioning of the hydro-electric power station at Shivasamudram in Karnataka, the progress was not impressive till 1947. The installed capacity was as low as 19 lakh kw and activity was mainly concentrated around urban areas. Power generation programmes, however, made phenomenal progress with the advent of five year plans. Power sector is highly capital intensive and investment in this sector constitutes a substantial share of the total plan outlay in the country.

EVELOPMENT
NDER PLANS

During the First Plan, construction of a number of major river valley projects like Bhakra Nangal, Damodar Valley, Hirakud and Chambal Valley was taken up. These projects resulted in the stepping up of power generation. At the end of First Plan, the generation capacity stood at 34.2 lakh kw.

The emphasis in the Second Plan was on the development of basic and heavy industries, and the related need to step up power generation. The installed capacity at the end of the Second Plan reached 57 lakh kw.

During the Third Plan, the emphasis was on extending power supply to rural areas. A significant development in this phase was the emergence of inter-state grid system. The country was divided into five regions to promote power development on a regional basis. A regional electricity board was established in each region to promote integrated operation of the constituent power system.

The three Annual Plans that followed the Third Plan aimed at consolidating the programmes initiated during the Third Plan.

The Fourth Plan envisaged the need for Central participation in expansion of power generation programmes at strategic locations to supplement the activities in the state sector.

The progress during the period covering the Third Plan, the three Annual Plans and the Fourth Plan was substantial with installed capacity rising to 313.07 lakh kw comprising 113.86 lakh kw from hydroelectric projects, 192.81 lakh kw from thermal power projects and the balance of 6.4 lakh kw from nuclear projects at the end of Fifth Plan. The installed capacity in the country by the end of 1982-83 was 387.55 lakh kw which included 33.94 lakh kw capacity of non-utility (captive) plants. New major generating capacity added during 1983-84 was 40.88 lakh kw.

A total capacity of 11,146 mw has been commissioned in the four years period of the Sixth Plan. During 1983-84, a capacity of 4,088 mw was commissioned. During the mid term review of the Sixth Plan, it was anticipated that a capacity addition of about 14,500—15,000 mw would be feasible during the Sixth Plan period against the target of 19,666 mw. A large number of projects are at present at various stages of construction and these would give benefits in different time horizons.

ORGANISATION

The subject 'Power' appears in the concurrent list of the Constitution and as such the responsibility for its development lies both with the Central and the state governments. In the Central Government, the Department of Power is responsible for the development of electric energy and policies relating to generation, transmission, distribution and conservation. The Department co-ordinates matter relating to energy policy. The Department is responsible for legislation on electricity and administers the Electricity (Supply) Act, 1910. The Electricity (Supply) Act, 1948 forms the basis of the administrative structure of the electricity industry. The Act provided for setting up of a Central Electricity Authority (CEA) with responsibility, *inter-alia,* to develop a national power policy and to co-ordinate the activities of various agencies and State Electricity Boards. The Act was amended in 1976 to enlarge the scope and functions of the CEA and to enable creation of companies for generation of electricity.

CEA advises the Department of Power of matters concerning power. Its main functions are developing a national power policy, formulation and co-ordination of plans for power development, techno-economic appraisals of projects, monitoring the implementation of the projects, ensuring efficient performance of the power projects, investigation of power projects, arbitration in certain matters, promotions and co-ordination of research and design activities in the power field, providing assistance to state governments and state electricity boards. collection and publication of statistical information relating to power supply industry and design and consultancy services.

The Department of Power controls the Central sector power corporations *viz.* National Thermal Power Corporation (NTPC), National Hydro-electric Power Corporation (NHPC), North-Eastern Electric Power Corporation (NEEPCO), Rural Electrification Corporation (REC) and statutory bodies namely, Damodar Valley Corporation (DVC), Bhakra Beas Management Board (BBMB), construction agencies like National Projects Construction Corporation and Beas Construction Board and research and training organisations like Power

Engineers Training Society (PETS) and Central Power Research Institute (CPRI).

ydro

The first systematic assessment of the country's economic hydro potential was conducted by Central Water and Power Commission during 1953-58, when the total economically exploitable potential was placed at nearly 2.5 crore kw continuous to be generated by 260 hydro schemes. In view of the technological advancement and changed conditions in power systems, a reassessment of the country's hydro potential is being carried out by CEA and a quick preliminary assessment places the country's hydro potential at around 75,000 mw at 60 per cent load factor with an annual energy potential around 400 TWH (Trillion watt hour). Emphasis is being laid on a continuing basis on the development of hydro-electric resources in the country which is renewable source of energy. The state governments have been advised to draw up a plan to identify and take up the development of small hydro-electric projects as part of Revised 20-Point Programme, particularly in remote and hilly locations with a view to reach electricity in the remote hill areas. A number of hydro-electric projects are at an advanced stage of construction. A number of micro, mini and small hydro-electric schemes are also presently in operation in several parts of the country. Such schemes make use of water available in perennial hill streams or on the irrigation canals developing small drops available in the canals for power generation to meet small power requirements. This does not involve high costs and extension of existing transmission lines. The hill districts of Uttar Pradesh and parts of Jammu and Kashmir, Himachal Pradesh and Arunachal Pradesh have a large number of such schemes in operation. Presently there are 103 micro/small hydro-electric schemes (upto an installed capacity of 15 mw) under operation which accounts for an aggregate installed capacity of 150 mw. Studies have been undertaken for uprating the generating capacity of the existing hydro-electric units and 84 such units in 20 power stations have been identified for possible uprating.

hermal

There has been a phenomenal growth in power generation by way of installation of coal-based thermal and diesel power houses which contribute about 60 per cent of the electricity generation in the country. By the end of Sixth Plan, the share of thermal capacity is expected to reach 66 per cent of the total capacity in the country. New thermal units are coming up near coal pit-heads and the perspective plan for 1985-90 envisages implementation of 50 thermal schemes. Of this, 31 schemes (13,925 mw) have already been approved for investment. As the hydro-generation is dependent on the vagaries of nature, thermal generation plays an important role in providing reliable and continuous sources of power. It, therefore, becomes more important to improve the performance of thermal generating stations and maximising the thermal generation in order to meet the growing power needs. Constant monitoring has resulted in a plant load factor (PLF) of the thermal units getting raised to 53.3 per cent. A few power stations, namely, Vijayawada, Parli, Dhuwaran, Trombay and Neyveli achieved PLF exceeding 70 per cent. Efforts are being made to ensure adequate availability of spare parts and trained operation and maintenance personnel. There has been a sustained effort not only in increasing availability of coal but improving its quality. The aspects of uprating of thermal units is also being examined. In the first instance, uprating in four stations is being taken up namely, Indraprastha Station, Delhi; Obra Thermal Power Station, Uttar Pradesh; Badarpur Thermal Power Station, Delhi and Talcher Power Station, Orissa.

NATIONAL REGIONAL GRIDS

Significant progress has been made in the expansion of transmission and distribution facilities in the country. The total length of transmission lines of 66 kv and above increased from 8,270 Ckt (circuit) km in December 1950 to 46,000 Ckt (circuit) km in March 1966 to 1.15 lakh km in March 1980 and 1.45 lakh km in March 1984.

The highest transmission voltage in the country at present is 400 kv and about 4,500 Ckt (circuit) km of 400 kv lines have been constructed upto March 1984 and about 3,900 Ckt (circuit) km of these are in actual operation.

Prior to the Fourth Plan, transmission systems in the country was developed more or less as state systems. This is because the generating stations were built primarily in the state sector. When the state transmission systems had developed to some reasonable extent in the Third Plan, the potentiality of integrated and inter-connected operation of individual state systems within the regions was thought of.

Fairly well interconnected systems at 220 kv are presently available in all the regions of the country except in the north-eastern region.

With the creation of two generation corporations, namely, National Thermal Power Corporation and National Hydro Electric Power Corporation in 1975, the Centre has started playing an increasingly larger role in the development of the grid systems.

The 400 kv transmission systems being constructed by these organisations as part of their generation projects, along with the 400 kv intra-state, inter-state and inter-regional transmission lines would form part of the national power grid. Certain key 400 kv transmission system elements which are at present in the state sector are being transferred with the concurrence of the states, to the Central Sector for facilitating effective central control of the national grid. The concept of having a centrally owned national grid has been accepted by the Government, and steps are now being taken for forming a national power grid.

National power grid will promote integrated operation and transfer of power from one system to another with the ultimate objective of ensuring optimum utilisation of resources in the country.

India has now well integrated regional power systems. Exchange of power is taking place regularly between a large number of state systems and this greatly facilitates better utilization of the existing capacity.

REGIONAL ELECTRICITY BOARDS

Regional electricity boards were set up in 1964 in each of the five regions for the development of integrated operation initially between the states of the region with the ultimate aim of forming a well-knit national grid. The five regional electricity boards are : Northern Regional Electricity Board covering Haryana, Himachal Pradesh, Jammu and Kashmir, Punjab, Rajasthan, Uttar Pradesh, Chandigarh and Delhi; Western Regional Electricity Board covering Gujarat, Madhya Pradesh, Maharashtra, Goa, Daman and Diu and Dadra and Nagar Haveli, Southern Regional Electricity Board covering Andhra

Pradesh, Karnataka, Kerala, Tamil Nadu and Pondicherry; Eastern Regional Electricity Board covering Bihar, Orissa, West Bengal and Sikkim and North-Eastern Regional Electricity Board covering Assam, Manipur, Meghalaya, Nagaland, Tripura, Arunachal Pradesh and Mizoram.

Regional Load Despatch Centres (RLDC), which are being established, will co-ordinate the activities of State Load Despatch Centres in the regions so as to ensure optimum utilisation of the generation and transmission facilities in the regions. These centres would be equipped with computer based telemetry, data processing and load frequency control equipment and live system diagram board to depict changing system conditions.

Interim Regional Load Despatch Centres have been established in the Fifth Plan in order to develop the operational procedures, collect operating data, etc., in all the five regions. The setting up of permanent load despatch centres with on-line computer equipment is in active progress in the northern region at Delhi, western region at Bombay and eastern region at Calcutta. In the case of the southern region, Phase 1 of the RLDC project has been completed and the Despatch Centre has been functioning at Bangalore.

ate Electricity
oards

State electricity boards have been established in 18 out of the 22 states and they are mainly responsible for generation and distribution of electricity in their respective states. Manipur, Tripura, Sikkim and Nagaland are yet to establish their electricity boards. The Electricity (Supply) Act, 1948 was amended in October 1976, which *inter-alia* assigned a larger role to the Central Electricity Authority particularly in the preparation of national power plans and provided for establishment of Central or state generating companies.

TER-
ATIONAL
OOPERATION

India has been co-operating with neighbouring countries in the field of power development.

The co-operation between India and Nepal in the field of power development has been varied and significant. India has financed and constructed the 21 mw hydro-electric project at Trisuli, one of the important sources of power supply in Nepal. The Devighat Hydro-electric Project with an installed capacity of 14.1 mw is a tailrace project of the Trisuli Hydro-electric project and is under construction by National Hydro-electric Power Corporation. Multi-purpose developments in the Gandak and Kosi basins have been taken up for mutual benefit under agreements between the two countries. The Gandak Project includes a 15 mw power station. A 20 mw hydel station is included under the Kosi Project. Three units of 5 mw at this power station have already been commissioned. Financed and constructed by India, the benefits from this project would be shared between the two countries. There is an agreement under which power is being exchanged between Nepal and India at border points, mainly to supply electricity to isolated villages.

A major step in Indo-Bhutan co-operation in the field of power was taken with the signing of an agreement in 1974 for the implementation of the Chukha Hydro-electric Project with an installed capacity of 336 mw (4 × 84 mw). The project will be implemented by Bhutan and funded by India. The power generated will first be used to meet the needs of Bhutan and the surplus power will be bought by India.

India has been providing assistance to Bhutan in establishing micro-hydel stations and associated distribution facilities. The foot-hill towns of Phuntsholing and Samchi in Bhutan receive power from Jaldhaka Project located on the border between India and Bhutan, which has been developed under an agreement between the two countries for mutual benefit.

India and Bangladesh have constituted a joint power co-ordination board to maintain liaison between the two countries and identify areas of co-operation in the field of power.

India has assisted Afghanistan in the construction and commissioning of the first stage of the Chardeh-Ghorband Project (3 × 100 kw). Recently, India agreed to supply generating and transmission equipment for the second stage extension of the Chardeh-Ghorband Project (1 × 100 kw) and Banain (3 × 250 kw), Faizabad (3 × 85 kw) and Khulm (2 × 100 kw) micro-hydel projects.

PERFORMANCE OF POWER SECTOR

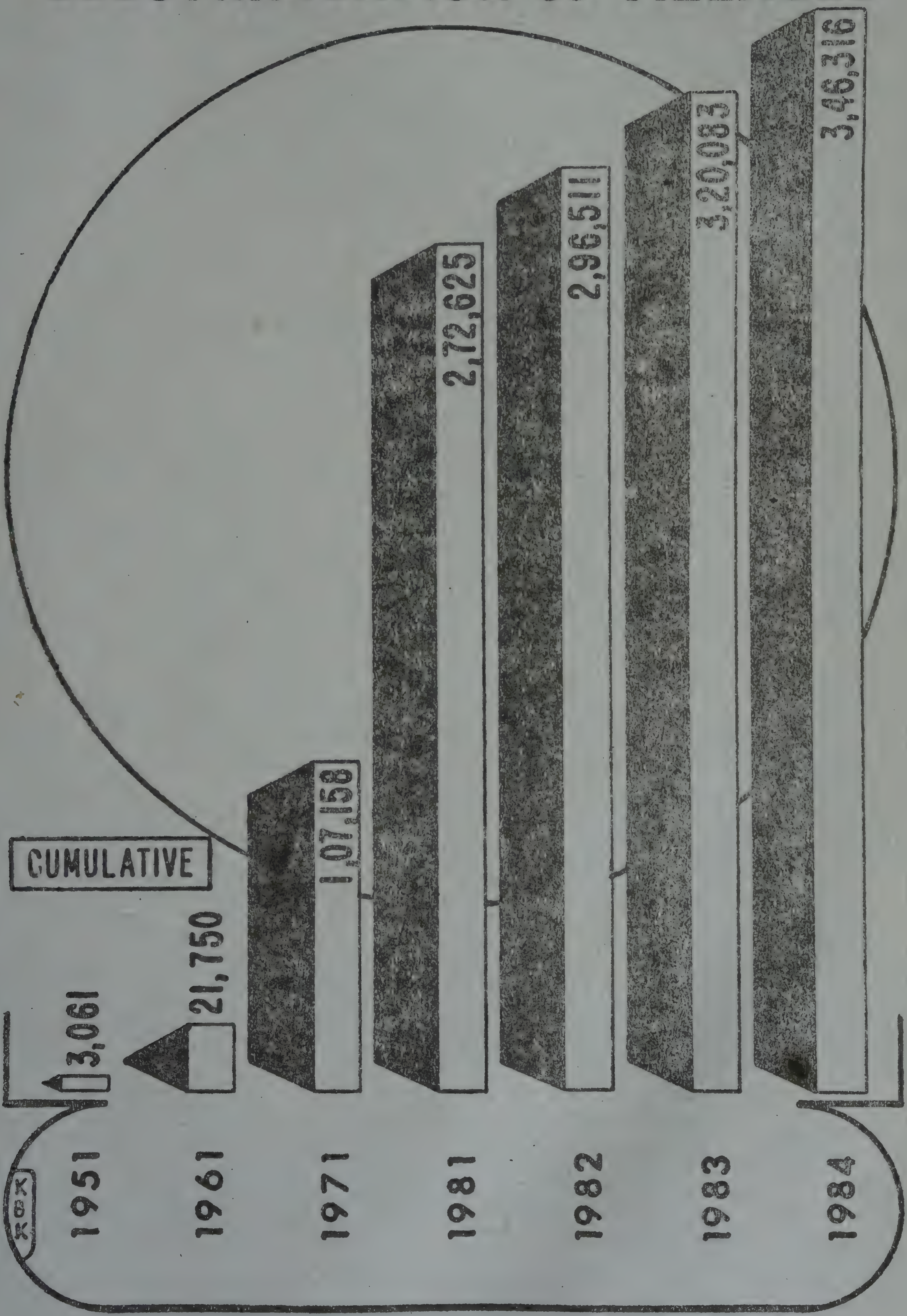
Energy generation in the country has been steadily improving since the beginning of the Sixth Plan. Energy generated during 1983-84 was 139.9 lakh crore units as compared to 131.5 lakh crore units in 1982-83 representing an increase of 6.4 per cent. The energy generation target for 1983-84 was fixed at 144.3 lakh crore units comprising 91.8 lakh crore units in thermal, 49 lakh crore units in hydro and 3.5 lakh crore units in nuclear. As against this, the achievement has been 139.9 lakh crore units or 96.9 per cent of the target comprising 86.5 billion units thermal, 49.9 billion units hydro and 3.5 billion units nuclear. There was shortfall in thermal and nuclear generation. Some of the important factors for the shortfall were delay in stabilisation work and long duration outages. The hydel generation exceeded the target. During the year, new capacity of 4,088 mw was added (which is 98.3 per cent of the target of 4,157 mw) as against 3,060 mw in 1982-83, representing an increase of 33.6 per cent. It was for the first time that a capacity of more than 4,000 mw was added in a year. The target of 4,157 mw fixed for 1983-84 was, by and large, achieved. Another significant feat achieved was the commissioning of the first 500 mw unit at Trombay and three Central sector units of 210 mw each, namely, Singrauli Super Thermal Power Project (STPP) units 4 and 5, Korba STPP unit-3, the later two having been advanced from the commissioning programme of 1984-85. The advance commissioning of these units almost covered up the slippage, from the year's target. The state sector showed considerable improvement in as much as the overall gestation period of thermal plants was reduced.

In the field of rural electrification and energisation of pump-sets which was closely monitored under the Revised 20-Point Programme, the achievements were in no way insignificant. A total of 23,532 villages were electrified during the year; achieving 99.5 per cent of the target of 23,631 villages fixed for the year. About 3.34 lakh villages constituting 58 per cent of the total census villages in India had been electrified by the end of March 1984, covering nearly 72 per cent of the rural population. The pumpsets energised during 1983-84 were 3.37 lakh as against the target of 3.68 lakh pumpsets. Energisation of irrigation pumpsets and tubewells has exceeded 51 lakh which is nearly 43 per cent of the total potential of 120 lakh in the country.

POWER CORPORATIONS

The National Thermal Power Corporation (NTPC) was incorporated in November 1975 as a public sector undertaking with the main

ELECTRIFICATION OF VILLAGES



objective of planning, promoting and organising the integrated development of thermal power in the country. The Corporation has been entrusted with the task of execution and operation of large pit-head thermal power stations and associated transmission networks. The authorised share capital of the Corporation is Rs 1,500 crore.

NTPC is presently setting up six super thermal power stations within accrued capacity of 9,060 mw at Singrauli (Uttar Pradesh), Korba (Madhya Pradesh), Ramagundam (Andhra Pradesh), Farakka (West Bengal), Vindhyachal (Madhya Pradesh) and Rihand (Uttar Pradesh) and 8,711 circuit km of associated 400 kv transmission lines at an accrued investment of Rs 5,723.09 crore. The first four projects at Singrauli, Korba, Ramagundam and Farakka are being set up with the assistance of World Bank and are at advanced stages of construction. Two units of 200 mw at Singrauli and one unit of 200 mw at Korba have been commissioned. NTPC is also operating the Badarpur Thermal Power Station at Delhi since 1978.

The National Hydro-electric Power Corporation (NHPC) was registered in November 1975 with the main objectives of planning, promoting and organising an integrated hydro-electric power and to take up construction of Central sector hydro-electric projects, inter-state transmission lines and ancillary works. The Corporation has presently an authorised capital of Rs 400 crore. NHPC is engaged in the execution of Baira Suil Hydro-electric Project (Himachal Pradesh), Loktak Hydro-electric Project (Manipur), Salal Hydro-electric Project (Jammu and Kashmir), and Devi Ghat Hydro-electric Project (Nepal) with a total capacity of 644.1 mw. Baira Suil Hydro-electric project with three units of 60 mw each was commissioned with commercial operation in April 1982.

The National Projects Construction Corporation was set up in 1957 as a joint venture of the Central and state governments as a construction contract agency for the execution of multi-purpose river valley projects, power projects and other heavy engineering projects.

The Rural Electrification Corporation (REC) was set up as a public sector corporation in July 1969 with the objective of promoting rural electrification through financing rural electrification schemes and promoting and financing rural electric co-operatives in the states. The authorised share capital of the Corporation is Rs 150 crore with the paid up capital at Rs 120 crore.

The North Eastern Electric Power Corporation (NEEPCO), registered in April 1976, provides and promotes an integrated system of power in north eastern region and formulates and recommends to the Central Government through the North Eastern Council, a regional policy for development of power in north eastern region. The major project under execution is Kopili Hydro-electric Project with an installed capacity of 150 mw.

The Damodar Valley Corporation (DVC) was established in 1948 under an Act of Parliament for the unified development of Damodar Valley covering an area of 24,235 sq km in Bihar and West Bengal. The functions of the Corporation are control of floods, irrigation and generation and transmission of power and include activities like navigation, soil conservation, promotion of public health, agricultural, industrial and economic development of the valley. The Corporation has three thermal power stations at Bokaro, Chandrapura and Durgapur with a total installed capacity (derated) of 1,445 mw and multi-purpose dams at Tilaiya, Panchet and Maithon with a capacity of 104 mw. The work on three thermal units of 210 mw each at Bokaro and one 40 mw turbine unit at Panchet is in progress.

Consequent on the re-organisation of the erstwhile Punjab state in 1966, the management of Bhakra Project and the construction of Beas Project were entrusted to Bhakra Management Board (BMB) and Beas Construction Board (BCB) respectively under the Punjab Reorganisation Act, 1966. As provided in the Act, consequent on the completion of certain works of the Beas Project, the Bhakra Beas Management Board (BBMB) came into being to take over management of the works formerly managed by the BMB and the works completed at the Beas Project. The BCB is continuing work on Stage II of the Beas Project, which comprises additions of two units of 165 mw each at Dehar and two units of 60 mw each at Pong. The total installed capacity of Beas Project is 1,020 mw comprising 4 × 165 mw at Dehar and 6 × 60 mw at Pong. The Bhakra Nangal Project has an installed capacity of 1,355 mw, comprising 600 mw which has been uprated to 660 mw at Bhakra Right Bank Power Plant, 450 mw which has been uprated to 540 mw at Bhakra Left Bank Power Plant, and 77.5 mw each at Ganguwal Power House and Kotla Power House.

The Central Power Research Institute (CPRI) was established by the Government in 1960 for carrying out research and development in the field of electrical power engineering. CPRI was made an autonomous society in 1978. It is also the national testing authority for certification of electrical equipment for supply utilities and power equipment industries.

The Power Engineers Training Institute (PETS) was set up in 1980 as an apex national body for meeting training requirements in the power sector. It has four Regional Training Institutes at . .eyveli, Durgapur, Badarpur and Nagpur and runs a number of regular and short-term courses. A Power Systems Training Institute and Hot Line Training Centre have also been established in Bangalore to train engineers in the operation of power systems and load despatch techniques and maintenance of transmission lines.

AJOR POWER
ROJECTS

The details of major thermal power stations with generating capacity are given in table 18.2. The details of the major nuclear power stations with generating capacity are given in table 18.3. The details of major hydro power stations with generating capacity are given in table 18.4. The details of generating units commissioned during 1983-84 are given in table 18.5.

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JOR POWER
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Region/State/System	Station	Capacity (mw)	
		Installed	Derated
NORTHERN REGION			
Delhi	Badarpur	720·0	720.0
	Indraprastha Station	284·1	282.5
	Rajghat	59·6	28.0
Haryana	Faridabad (Extension)	180·0	180.0
	Panipat	220·0	220·0
	Faridabad	15·0	15.0

Region/State/System	Station	Capacity (mw)	
		Installed	Derated
Jammu and Kashmir	Kalakote	22·5	22·5
Rajasthan	Kota	220·0	220·0
Punjab	Bhatinda	440·0	440·0
Uttar Pradesh	Obra (1-5)	250·0	250·0
	Obra (6-8)	300·0	300·0
	Obra (9-13)	1,000·0	1,000·0
	Paricha	110·0	110·0
	Harduaganj B (1-4)	220·0	220·0
	Harduaganj B (5-6)	120·0	120·0
	Harduaganj B-7	110·0	110·0
	Harduaganj A	90·0	90·0
	Panki	32·0	29·0
	Panki (3-4)	220·0	220·0
	Riverside Power House (Kanpur)	75·0	65·0
	Others	42·5	36·0
	Singrauli	1,050·0	1,050·0
	Total for the Region	5,780·7	5,728·0
WESTERN REGION			
Gujarat	Dhuvaran	534·0	534·0
	Ukai 1-2	240·0	240·0
	Ukai 3-4	400·0	400·0
	Wanakbori	630·0	630·0
	Gandhi Nagar	240·0	240·0
	Utran	67·5	61·0
	Others	95·0	77·0
	Ahmedabad Electric Co.	180·0	161.0
	Sabarmati	110·0	110.0
Madhya Pradesh	Satpura 1-5	312·5	312·5
	Satpura 6-9	830·0	830·0
	Korba I	100·0	100·0
	Korba II	200·0	200·0
	Korba III	240·0	240·0
	Amarkantak 1-2	60·0	60·0
	Amarkantak 3-4	240·0	240·0
	Korba West	420·0	420·0
	Korba Super Thermal Power Station (STPS)	630·0	630·0
Maharashtra	Koradi 1-4	480·0	480·0
	Koradi 5-7	620·0	620·0
	Nasik 1-2	280·0	280·0
	Nasik 3-5	630·0	630·0
	Khaperkheda	90·0	90·0
	Paras	92·5	92·5
	Bhusawal 1	62·5	62·5
	Bhusawal 2-3	420·0	420·0
	Uran	240·0	240·0
	Parli 1-2	60·0	60·0
	Parli 3	210·0	210·0
	Ballarshah	22·5	18·0

Region/State/System	Station	Capacity (mw)	
		Installed	Derated
	Chandrapur	210·0	210·0
	Chola	96·0	40·0
	Trombay 1-4	337·5	330·0
	Trombay 5	500·0	500·0
	Total for the Region	9,880·0	9,768·5
SOUTHERN REGION			
Andhra Pradesh	Kothagudem 1-4	240·0	240·0
	Kothagudem 5-8	440·0	440·0
	Vijayawada	420·0	420·0
	Ramagundem B	62·5	62·5
	Ramagundem A	25·0	13·0
	Nellore	30·0	30·0
	Others	20·0	20·0
	Ramagundem STPS	200·0	200·0
Tamil Nadu	Ennore	450·0	450·0
	Tuticorin	630·0	630·0
	Basin Bridge	90·0	70·0
	Neyveli	600·0	600·0
	Total for the Region	3,207·5	3,175·5
EASTERN REGION			
Bihar	Patratu	730·0	730·0
	Barauni	255·0	255·0
Damodar Valley Corporation	Chandrapura	780·0	780·0
	Durgapur	500·0	460·0
	Bokaro	247·5	205·0
Orissa	Talcher	470·0	470·0
West Bengal	Bandel 1-4	330·0	320·0
	Bandel 5	210·0	210·0
	Santaldih	480·0	480·0
	Gouripore	35·0	28·0
	Gas Turbine	100·0	100·0
	Calcutta Electric Supply Corporation	412·5	328·0
	Titagarh	180·0	180·0
	Durgapur Projects	285·0	280·0
	Total for the Region	5,015·0	4,826·0
NORTH EASTERN REGION			
Assam	Namrup	111·5	111·5
	Bongaigaon	120·0	120·0
	Chandrapur	30·0	30·0
	Others	66·0[1]	66·0
	Total for the Region	327·5	327·5
	All India Total for Thermal	24,210·7	23,825·5

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1. The capacity and generation is in respect of the generating stations being monitored.

TABLE 18.3
MAJOR POWER PROJECTS (NUCLEAR)

Region/State/System	Station	Capacity (mw) Installed	Derated
Rajasthan	Rajasthan Atomic Power Station	440·0	440·0
Maharashtra	Tarapur	420·0	420·0
Tamil Nadu	Madras Atomic Power Project (Kalpakkam)	235·0	235·0
	All India Total for Nuclear	1,095·0	1,095·0

TABLE 18.4
MAJOR POWER PROJECTS (HYDRO)

Region/State/System	Station	Capacity (mw) Installed	Derated
NORTHERN REGION			
Bhakra Beas Management Board	Bhakra Right	600·0	600·0
	Bhakra Left	450·0	450·0
	Ganguwal	77·5	77·5
	Kotla	77·5	77·5
	Dehar	990·0	990·0
	Pong	360·0	360·0
Himachal Pradesh	Giri Bata	60·0	60·0
	Bassi	60·0	60·0
	Baira Siul	180·0	180·0
Jammu and Kashmir	Lower Jhelum	105·0	105·0
	Small Hydel	70·4	69·0
Rajasthan	Rana Pratap Sagar	172·0	172.0
	Jawahar Sagar	99·0	99·0
Punjab	Shanan	110·0	110·0
	Upper Bari Doab Canal	45·0	45·0
	Mukerian	45·0	45·0
Uttar Pradesh	Rihand	300·0	300·0
	Yamuna Stage II (Chibro)	240·0	240·0
	Yamuna Stage II (Khodri)	120·0	120.0
	Yamuna Stage I & IV	114·8	114·8
	Chilla	144·0	144·0
	Obra	99·0	99·0
	Ganga Canal	45·2	45·2
	Khatima	41·4	41.4
	Matatila	30·0	30.0
	Ramganga	198·0	198.0
	Total for the Region	4,833·8	4,832·4
WESTERN REGION			
Gujarat	Ukai	300·0	300·0
Madhya Pradesh	Gandhi Sagar	115·0	115·0
Maharashtra	Koyna	880·0	880·0
	Koyna DPH	40·0	40·0
	Vaitarna	60·0	60·0
	Others	47·5	47·5
	Tata	276·0	276·0
	Total for the Region	1,718·5	1,718·5

Region/State/System	Station	Capacity (mw)	
		Installed	Derated
SOUTHERN REGION			
Andhra Pradesh	Lower Sileru	400·0	400.0
	Upper Sileru	120·0	120·0
	Machkund	114·7	114.7
	Nagarjunasagar	510·0	510.0
	Nagarjunasagar RBC PH	60·0	60·0
	Srisailam	330·0	330·0
	Tungabhadra Dam	72·0	72.0
	Donkrayi	25·0	25·0
	Nizam Sagar	10·0	10·0
Karnataka	Sharavathy	891·0	891·0
	Kalinadi	810·0	810·0
	Jog	120·0	120·0
	Bhadra	33·2	33·2
	Shivasamudram	42·0	30·0
	Shimshapura	17·2	16·0
	Munirabad	27·0	27·0
	Lingnamakki	55·0	55·0
Kerala	Idukki	390·0	390·0
	Sabarigiri	300·0	300·0
	Kuttiadi	75·0	75·0
	Sholayar	54·0	54·0
	Neriamanglam	45·0	45·0
	Sengulam	48·0	48·0
	Pallivasal	37·5	37·5
	Poringal	32·0	32·0
	Paniar	30·0	30·0
Tamil Nadu	Kundah I-V	535·0	535·0
	Mettur	240·0	240·0
	Periyar	140·0	140·0
	Kodayar	100·0	100·0
	Sholayar 1-2	95·0	95·0
	Pykara	70·0	70·0
	Aliyar	60·0	60·0
	Sarkarpathy	30·0	30·0
	Moyar	36·0	36·0
	Suruliyar	35·0	35·0
	Papanasam	28·0	28·0
	Total for the Region	6,017·6	6,004·4
EASTERN REGION			
Bihar	Kosi	20·0	20·0
	Subernarekha	130·0	130·0
Damodar Valley Corporation	Maithon	60·0	60·0
	Panchet	40·0	40·0
	Tilaiya	4·0	4·0
Orissa	Balimela	360·0	360·0
	Hirakud	270·0	270·0
West Bengal	Small Stations	41·0	41·0
Sikkim	Lower Lagyap	12·0	12·0
	Total for the Region	937·0	937·0

Region/State/System	Station	Capacity (mw) Installed	Capacity (mw) Derated
NORTH EASTERN REGION			
Meghalaya	Kyrdemkulai	60·0	60·0
	Khandong	25·0	25·0
	Small Stations	65·2	65·2
Manipur	Loktak	105·0	105·0
Tripura	Small Stations	15·0	15·0
	Total for the Region	270·2	270·2
	All India Total	13,777·1	13,762·5

TABLE 18.5
GENERATING UNITS COMMISSIONED DURING 1983-84

Sl. No.	Project/Unit	State	Capacity (mw)	Commissioned on
NORTHERN REGION				
I. *Thermal*				
1.	Kota Unit-2	Rajasthan	110	13 July 1983
2.	Singrauli STPS Unit-4	Uttar Pradesh (Central)	210	2 November 1983
3.	Singrauli STPS Unit-5	Do.	210	26 February 1984
4.	Paricha-1	Uttar Pradesh	110	31 March 1984
		Sub-Total	640	
II. *Hydro*				
1.	Dehar Unit-6	BB MB	165	10 November 1983
2.	Mukerian Unit-1	Punjab	15	2 October 1983
3.	Mukerian Unit-2	Punjab	15	14 October 1983
4.	Mukerian Unit-3	Punjab	15	25 November 1983
5.	Yamuna Stage II Khodri Unit-I	Uttar Pradesh	30	29 January 1984
6.	Yamuna Stage II Khodri Unit-2	Uttar Pradesh	30	9 February 1984
7.	Yamuna Stage II Khodri Unit-3	Uttar Pradesh	30	30 March 1984
8.	Yamuna Stage II Khodri Unit-4	Uttar Pradesh	30	28 February 1984
		Sub-Total	330	
		Total (Northern Region)	970	
WESTERN REGION				
I. *Thermal*				
1.	Wanakbori Unit-3	Gujarat	210	15 March 1984
2.	Korba West Unit-1	Madhya Pradesh	210	21 June 1983
3.	Korba West Unit-2	Madhya Pradesh	210	30 March 1984
4.	Korba STPS Unit-2	Madhya Pradesh (Central)	210	31 October 1983
5.	Korba STPS Unit-3	Madhya Pradesh (Central)	210	17 March 1984
6.	Satpura Unit-9	Madhya Pradesh	210	27 February 1984
7.	Chandrapur-1	Maharashtra	210	15 September 1983
8.	Trombay Unit-5	Maharashtra	500	25 January 1984
		Sub-Total	1,970	
II. *Hydro*		Nil		
		Total (Western Region)	1,970	

Sl. No.	Project/Unit	State	Capacity (mw)	Commissioned on
SOUTHERN REGION				
I. *Thermal*				
1.	Ramagundem STPS Unit-1	Andhra Pradesh (Central)	200	27 October 1983
II. *Nuclear*				
1.	Kalpakkam Unit-1 (MAPP)	Tamil Nadu	235	23 August 1983
III. *Hydro*				
1.	Nagarjunasagar Right Bank Canal Unit-2	Andhra Pradesh	30	20 September 1983
2.	Donkaray Unit-1	Andhra Pradesh	25	4 October 1983
3.	Srisailam Unit-3	Andhra Pradesh	110	19 November 1983
4.	Kalinadi Unit-6	Karnataka	135	25 March 1984
		Sub-Total	300	
		Total (Southern Region)	735	
EASTERN REGION				
I. *Thermal*				
1.	Titagarh Unit-2	West Bengal	60	26 April 1983
2.	Titagarh Unit-3	West Bengal	60	16 Jaunary 1984
3.	Patratu Unit-9	Bihar	110	30 March 1984
		Sub-Total	230	
II. *Hydro*				
1.	Jaldhaka Stage-II Unit-1	West Bengal	4	24 September 1983
2.	Jaldhaka Stage II Unit-2	West Bengal	4	23 September 1983
		Sub-Total	8	
		Total (Eastern Region)	238	
NORTH EASTERN REGION				
I. *Thermal*				
1.	Lakwa Gas Turbine Unit-3	Assam	15	29 July 1983
II. *Hydro*				
1.	Loktak Unit-1	Manipur	35	29 May 1983
2.	Loktak Unit-2	Manipur	35	30 April 1983
3.	Loktak Unit-3	Manipur	35	10 May 1983
4.	Gumti Unit-3	Tripura	5	6 January 1984
5.	Khandong PH Unit-1 (Kopili)	Meghalaya	25	7 March 1984
6.	Khandong PH Unit-2[1] (Kopili)	Meghalaya	25	11 March 1984
		Sub-Total	160	
		Total (North Eastern Region)	175	
	All India Total	Thermal (17 Units)	3,055	
		Hydro (20 Units)	798	
		Nuclear (1 Unit)	235	
		Total	4,088	

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[1] Unit was rolled.

COAL

Coal has been recognised as the backbone of our energy resources. The energy requirements of the country are being met to a large extent by generation of electricity based on the use of coal.

Production

After a period of stagnation for several years when production remained at a level of about 10 crore tonnes, coal production has been steadily increasing since 1980-81. In 1980-81, a production of 11.40 crore tonnes was achieved and the production further increased to 12.42 crore tonnes in 1981-82. In 1982-83, coal production reached a level of 13.06 crore tonnes when a growth of 5.1 per cent was registered. The overall coal production during 1983-84 was 13.83 crore tonnes. The target of coal production for 1984-85 has been fixed at 15.20 crore tonnes.

Project and Planning

During 1983-84 a record number of 29 coal projects with a total capacity of coal production of 439 lakh tonnes per annum at a total capital outlay of Rs 1,639.57 crore have been sanctioned by the Government. In addition, two coal washeries for a total capacity of 55 lakh tonnes at an estimated cost of Rs 60.27 crore have also been sanctioned.

Resources

The coal reserves of India as per the last assessment (September 1978) made by Geological Survey of India (GSI) stands at 8,642.80 crore tonnes for coal seam of 1.2 metre and above in thickness down to a depth of 600 metre. If, however, the seam of thickness 0.5 metre and above and down to a depth of 1,200 metre are considered the reserves go upto 11,187.80 crore tonnes.

Based on subsequent assessments, the total coal reserves are now estimated at 12,010.50 crore tonnes of which the Gondwana col accounts for 11,921.10 crore tonnes and the tertiary coal 89.40 crore tonnes. The proved, probable and possible reserves account for 23 per cent, 37 per cent and 40 per cent of the reserves respectively.

Mining

Coal mining was first started at Raniganj, West Bengal in 1774. After Independence coal mining was stepped up and production risen from 320 lakh tonnes in 1950 to over 1,380 lakh tonnes in 1983-84.

Government nationalised the coking coal mines in 1972 and the non-coking coal mines in 1973. As a result the coal production in the country is now almost completely in the public sector. The only important mine which has not been nationalised is the captive coal mine of a private sector steel company.

The production of coal in public sector is organised mainly by Coal India Ltd., through its subsidiary companies. Coal India Ltd., came into being in 1975 as a holding company with five subsidiaries, namely Bharat Coking Coal Ltd. (BCCL), Central Coalfields Ltd. (CCL), Eastern Coalfields Ltd. (ECL), Western Coalfields Ltd. (WCL), and Central Mine Planning and Design Institute Ltd. BCCL, CCL, ECL, and WCL have been split into 2, 3, 2 and 2 divisions respectively. The North Eastern Coalfields (NEC) constitutes separate Division and is directly under Coal India Ltd. The authorised capital of Coal India Ltd. as a whole is Rs 2,000 crore.

The Singareni Collieries Company Ltd. (SCCL), a joint public sector undertaking of the Central Government and the Andhra Pradesh Government is also engaged in coal production. The company operates all the coal mines in Andhra Pradesh and produce only noncooking coal. The coal requirements of consumers in south are mostly met by SCCL.

Coal Washeries

Seventeen coal washeries are operating for the beneficiation of cooking coal. Four washeries with total washing capacity of 73.5 lakh tonnes per annum of cooking coal and one washery with raw coal input capacity of 35 lakh tonnes per annum of non-cooking coal are presently at various stages of construction.

Conservation

The work relating to conservation and safety in coal mines is being undertaken directly by the coal companies under the direction of Coal Conservation and Development Advisory Committee constituted under the Coal Mines (Conservation and Development) Rules, 1975.

Welfare

Coal industry being a highly labour intensive emphasis on welfare in coal mines has been increased considerably after the nationalisation of the coal industry. The coal industry employs more than 7 lakh workers and collieries are generally located in the remote areas. The coal companies are making provision for adequate number of houses, adequate potable drinking water, proper medical facilities, education for the wards of the employees, recreational facilities, etc. Besides this, Coal Mines Welfare Organisation which is being funded through a cess levied on the despatch of coal is also providing welfare facilities to the coal miners. On 31 December 1983, there were 2,21,220 standard houses. A population of 14,87,300 has been covered by protected water supply in the coalfield areas. There are 64 hospitals and 438 dispensaries.

Safety

Coal industry is the most hazardous industry and greater emphasis is being made on introducing modern technology for ensuring safety of workers. An internal safety organisation has been set up in each coal company to keep a close watch over the safety measures in coal mines and take corrective measures wherever required. A Safety Board is functioning at the headquarters of Coal India Ltd. to co-ordinate and monitor all matters relating to safety and formulate policy in this regard.

The rate of fatality per ten lakh tonne output which was 2.68 in 1976 has come down to 1.33 in 1983. Similarly rate of serious injuries per ten lakh tonne of output which was 15 in 1976 has come down to 6.35 in 1983.

Lignite

Lignite though inferior in calorific value (one tonne of Gondwana coal equal to about 2 tonnes of lignite) is of particularly importance to the southern region due to geographical location of the deposit and the scarcity of coal resources in this region.

Neyveli Lignite Corporation

The Neyveli Lignite Corporation, a public sector undertaking wholly owned by the Government, functions under the administrative control of the Department of Coal. The company was registered in November 1956 with the object of taking over, implementing and managing the integrated project consisting of an opencast lignite mine (65 lakh tonnes per annum), a 600 mw lignite fired Thermal Power Station, a Fertilizer Plant manufacturing Urea (1.52 lakh tonnes per annum), a Briquetting and Carbonisation plant called 'Leco' and 'Coke fines' (4.36 lakh tonnes per annum) and also a Clay Washing Plant (6,000 tonnes per annum).

The 330 crore tonnes of lignite deposit in Neyveli in the South Arcot district of Tamil Nadu is the only source of commercial fossil fuel in the south. The lignite was first exposed in August 1961 and regular production of lignite commenced from May 1962. The authorised capital of the corporation is Rs 750 crore.

To meet the power deficit in the southern region, the Government sanctioned in February 1978, the second mine with a capacity of 47 lakh tonnes of lignite per annum and the second thermal power station with a capacity of 630 mw (3 × 210 mw) at a cost of Rs 144.77 crore and Rs 213.98 crore respectively. In February 1983, the Government sanctioned revised estimates for the above projects at Rs 270.79 crore and Rs 483.42 crore respectively. In the same month the Government also sanctioned the expansion of the second mine from 47 lakh tonnes to 105 lakh tonnes at an estimated cost of Rs 334.77 crore and the expansion of second thermal power station from 630 mw to 1,470 mw at an estimated cost of Rs 638.95 crore.

OIL

In India, oil exploration began in 1866. The first wells were drilled in upper Assam at various sites with varying degrees of success. With the setting up of Oil and Natural Gas Commission (ONGC) on 14 August 1956 and Oil India Ltd. (OIL) on 14 October 1981, the exploration of oil and hydrocarbons in the country is being planned and co-ordinated operation.

In 1960, oil was struck at Ankleshwar in Gujarat, which was the first success of the ONGC. After this, oil was discovered at Kalol in Gujarat in 1961, at Rudrasagar in Assam also in 1961, and at Sanand in Gujarat in 1962.

In 1970, ONGC started offshore drilling. The first venture was in shallow waters near Aliabet in the Gulf of Cambay. After this breakthrough, ONGC moved out into the high seas. The *Sagar Samrat* drilling platform was acquired from Japan and began drilling on 31 January 1974 and oil was struck just 3 weeks later. The first barrel of commercial oil was pumped into the tanker *Jawaharlal Nehru* on 21 May 1976 only after 2 years of this strike.

Starting from a modest level of indigenous crude production of around 2.5 lakh tonnes and consumption of 34 lakh tonnes in 1950-51, crude oil production during 1982-83 was 2.11 crore tonnes, and the consumption level around 3.47 crore tonnes. About 1.69 crore tonnes of crude oil and 50.28 lakh tonnes of petroleum products were imported to meet the country's requirement in 1982-83. During the same period 43.5 lakh tonnes of crude oil and 8 lakh tonnes of petroleum products were exported. The net import of crude oil was 1.26 crore tonnes and net import of petroleum products was 42.3 lakh tonnes for the same period. The refinery throughput during 1982-83 stood at 3.32 crore tonnes.

The oil industry in India is divided into three broad segments :—(i) Oil exploration and production; (ii) refinery and marketing; and (iii) petrochemical and downstream units.

EXPLORATION AND PRODUCTION

Oil exploration started in India in an extensive and systematic way only after the setting up of Oil and Natural Gas Commission (ONGC) in 1956. With the acquisition of the shares of Burma Oil Company by the Government in 1981, Oil India Ltd. (OIL) became the second public sector undertaking engaged in oil exploration in the country. Besides the areas in the eastern region where Oil India was conducting exploration, they have now extended their exploration activities to Mahanadi basin and parts of Rajasthan.

In order to supplement the efforts of ONGC and OIL it was decided to invite foreign oil companies of repute to take up oil exploration in certain selected blocks. One such block has since been awarded to a firm in Saurashtra offshore. Thus the exploratory efforts which for many years were confined to thte north-east region today extends to 13 basins out of the 23 basins in India.

Keeping in view the need for indigenisation it has been decided to encourage Indian companies both in the public and private sectors to collaborate with foreign companies of repute and to offer services to ONGC and OIL in the field of exploration and production.

Increased efforts in the field of oil exploration and production have paid dividends by way of increased production of crude oil. In the beginning of the Sixth Plan *i.e.* in 1980-81 the annual production of crude oil in India was 105.1 lakh tonnes, which increased to 210.6 lakh tonnes in 1982-83. The production of crude oil in 1983-84 was 260.2 lakh tonnes (provisional). The target of production in the final year of the Sixth Plan is 296.3 lakh tonnes. Thus it would be seen that the production of crude oil will increase almost 3 times during the Sixth Plan period.

With the increase in the production of crude oil, the production of associated natural gas in the country has also gone up. The natural gas supplied by ONGC and OIL in 1983-84 was 28,273 lakh cubic metres (Provisional) as against a figure of 24,530 lakh cubic metres in 1982-83. With the discovery of gas fields like South Bassein, etc., and with the increased crude oil production, the production of natural gas in the country is likely to go up considerably in the years to come. With a view to ensure the optimum utilisation of nautral gas the Government has recently approved the creation of a Gas Corporation for marketing, transportation and processing of natural gas. A pipeline for carrying gas to the six gas based fertilizer plants in Rajasthan, Madhya Pradesh and Uttar Pradesh at a cost of approximately Rs 1,700 crore is also in an advanced stage of consideration.

REFINERIES

There are at present 12 refineries, all in public sector. The refineries processed 331.56 lakh tonnes of crude during 1982-83. This includes the new refinery at Mathura which was fully commissioned in May 1983.

The Burmah-Shell Refinery at Trombay and Caltex Refinery at Visakhapatnam together with their marketing associates were taken over by the Government in 1976. The Burmah-Shell Refinery was renamed as Bharat Petroleum Corporation Ltd. (BPCL) and the Caltex Oil Refinery (India) Ltd. was amalgamated with the Hindustan

Petroleum Corporation Ltd. (HPCL) in May 1978. The public sector refineries at Guwahati, Barauni, Koyali, Haldia, Digboi and Mathura are owned by the Indian Oil Corporation Ltd. (IOC) while those at Cochin and Madras are owned by joint sector companies. Refinery wise details of the years of commencement of production, their present capacities and actual crude throughput during 1980-81, 1981-82 and 1982-83 are given in the table 18.6.

TABLE 18.6
CAPACITY AND PRODUCTION OF REFINERIES

Refinery	Production commenced	Capacity (lakh tonne) April 1983	Actual throughput (lakh tonne)		
			1980-81	1981-82	1982-83
IOC, Barauni	1964	33·0	5·0	30·3	30·7
BPCL, Bombay	1955	52·5	43·7	49·9	44·8
CRL, Cochin	1966	33·0	29·2	34·2	31·8
AOC, Digboi	1901	5·0	5·0	5·0	5·2
IOC, Guwahati	1962	8·5	6·4	7·5	8·0
IOC, Haldia	1975	25·0	23·1	22·8	25·0
HPCL, Bombay	1954	35·0	31·1	34·8	31·2
HPCL, Visakhapatnam	1957	15·0	13·2	11·8	10·8
IOC, Koyali	1965	73·0	69·7	70·4	70·9
MRL, Madras	1969	28·0	26·1	28·0	28·6
BRPL, Assam Bongaigaon	1979	10·0	0·5	5·2	6·0
IOC, Mathura	1982	60·0	—	5·2	38·4

It is proposed to set up two new refineries, one near Karnal in Haryana and the other at Mangalore in Karnataka with a capacity of 60 lakh tonnes per annum.

Cochin Refineries

Cochin Refineries Ltd. (CRL) was incorporated in September 1963 with a designed capacity to process 25 lakh tonnes of crude per annum, which after the expansion of the refinery in August 1973 was raised to 33 lakh tonnes per annum. The products of the refinery are liquified petroleum gas, naphtha, motor spirit, superior kerosene, high speed diesel, light diesel oil, furnace oil and asphalt and all are sold to the Indian Oil Corporation for marketing.

Madras Refineries

The Madras Refineries Ltd. (MRL), was incorporated as a company in December 1965 with an authorised capital of Rs 13.50 crore, pursuant to the agreement between the Government of India, National Iranian Oil Company and AMCCO India, Inc. of USA. The company is implementing a programme to expand its capacity from 28 to 56 lakh tonnes together with 6 lakh tonnes FCC Unit and is scheduled for completion during July 1984 to January 1985.

Pipelines

Prior to 1964-65 pipeline had been constructed to transport the crude from the Nahorkatiya oil fields to Guwahati and Barauni refineries. Since then various multiproduct pipelines have been laid. These are Guwahati-Siliguri, Koyali-Ahmadabad, Barauni-Kanpur and Haldia-Mourigram Rajbandh pipelines. There is also a network of pipelines in Gujarat for transporting crude from the Gujarat oil fields to the Koyali Refinery.

A Crude pipeline with a length of 1,075 km from Salaya to Mathura *via* Viramgam with a branch line from the latter to Koyali has been laid by the IOC. A product pipeline from Mathura to

Jalandhar *via* Delhi and Ambala has been completed in three phases in December 1982.

Work on the Bombay Pune product pipeline project, which envisages installation of facilities for transportation through pipeline of major petroleum products from Bombay Refineries to Pune to cater to the demand of these products in Pune, Miraj, Solapur, Gulbarga, Bijapur, Raichur and Secunderabad is in progress and is expected to be completed by December 1984.

CORPORATIONS

Indian Oil

The Indian Oil Corporation Ltd. (IOC) was set up on 1 September 1964 by amalgamating the Indian Refineries Ltd. (estd. in 1958) with the Indian Oil Company Ltd. (estd. in 1959). The Corporation has three Divisions, namely, (i) the Marketing Division with headquarters at Bombay, (ii) the Refineries and Pipelines Division with headquarters at New Delhi; and (iii) the Assam Oil Division with headquarters at Digboi.

Indian Oil Corporation has a research and development centre at Faridabad in Haryana. The centre provides technical service to customers and is engaged in the development of sophisticated lubricating oil. The centre is actively working on the possibilities of production and utilisation of viable alternate substitute fuels.

The market participation of the Corporation was about 61.5 per cent of the total industry sales during 1982-83. As on 31 January 1984 the Corporation had in existence a total of 780 cooking gas (LPG) distributorships, 4,846 retail outlets (petrol/diesel) dealerships and 2,622 kerosene/light diesel dealerships in the country.

Bharat Petroleum Corporation

Following the Government's acquisition of the two Burmah Shell Companies in January 1976, the name of Burmah Shell Refineries Ltd. was changed to Bharat Refineries Ltd. from 12 February 1976. In view of the fact that the Company is an integrated refining and marketing company, the name of the company was changed to Bharat Petroleum Corporation Ltd. with effect from 1 August 1977.

The objectives of the Company have been mainly to manufacture both energy and non-energy petroleum products and store, distribute and market petroleum products efficiently. In addition, the Company is in the process of diversifying in the field of petrochemicals using certain refining streams as feedstock.

The market participation of BPCL in 1982-83 was 16.8 per cent of the total industry sale. As on 31 January 1984 the Company had in existence a total 273 cooking gas (LPG) distributorships, 3,410 retail outlets (petrol|diesel) dealerships and kerosene oil dealerships stood at 758.

Hindustan Petroleum Corporation

The Hindustan Petroleum Corporation was set up on 15 July 1974 by amalgamating ESSO Eastern Inc. USA and became cent per cent Govermnent owned company. With effect from 31 December 1976 Government acquired Caltex Oil Refining (India) Ltd. and merged with HPCL.

The main objectives of HPCL are refining of crude oil, manufacturing of lubricating base oils, manufacturing and blending of lubricants, grease and petroleum products and related automotive accessories all over the country and marketing of LPG.

The market participation of HPCL in 1982-83 was 17.7 per cent of the total industry sale. As on 31 January 1984, the Company had in existence a total of 643 cooking gas (LPG) distributerships, 3,391 retail outlets (petrol/diesel) dealership and 1,434 kerosene/ LDO distributorships.

ORGANISATIONS UNDERTAKINGS

Engineers India Ltd.

Engineers India Ltd. (EIL) was incorporated in 1965 and became a wholly Government owned undertaking in 1967. The company renders design engineering and technical consultancy services to organisations both in public and private sectors in the fields of petroleum refining, pipelines, petrochemicals, fertilizers, chemicals, cement, paper, power, non-ferrous metallurgical plants, ocean engineering and other process related industries. In addition, it offers specialised services in process design and development, commissioning and operation services, design of heat and mass transfer equipment, environment engineering planning and scheduling, cost engineering and also specialised services for maintenance, corrosion and material selection problems of process plants as well as procurement, inspection, transportation and custom clearance services. The company has its own computer system and is rendering services on electronic data processing to various clients.

Lubrizol India Ltd. was incorporated in July 1966 under the Companies Act in pursuance of an agreement entered into between the Government of India and Lubrizol Corporation, USA in December 1965. The company manufactures chemical additives for use in petroleum based fuels and lubricants needed for the core sectors of the economy like defence, transport, etc. The company manufactures some of the major intermediates locally and efforts have been going on to use progressively more and more indigenous raw materials, so as to reduce foreign expenditure on import of raw materials/fiinished products.

IBP Co. Ltd. apart from marketing petroleum products obtained from IOC the public sector has two other divisions, namely, Engineering Division and Chemicals Division. The former manufactures high vacuum engineering items like cryo-containers and the latter industrial explosives.

Balmer Lawrie & Co., a subsidiary of IBP, is engaged in the manufacture of lubricating greases and lube barrels, tea export, marketing agency products, tea and travel business. The company is exploring several projects as part of its diversification programme to ensure its continuous growth in future.

Major activities of Biecco Lawrie Ltd. are manufacture and marketing of electric motors and switchgear equipments and undertaking of electrical repairs of rotating machineries.

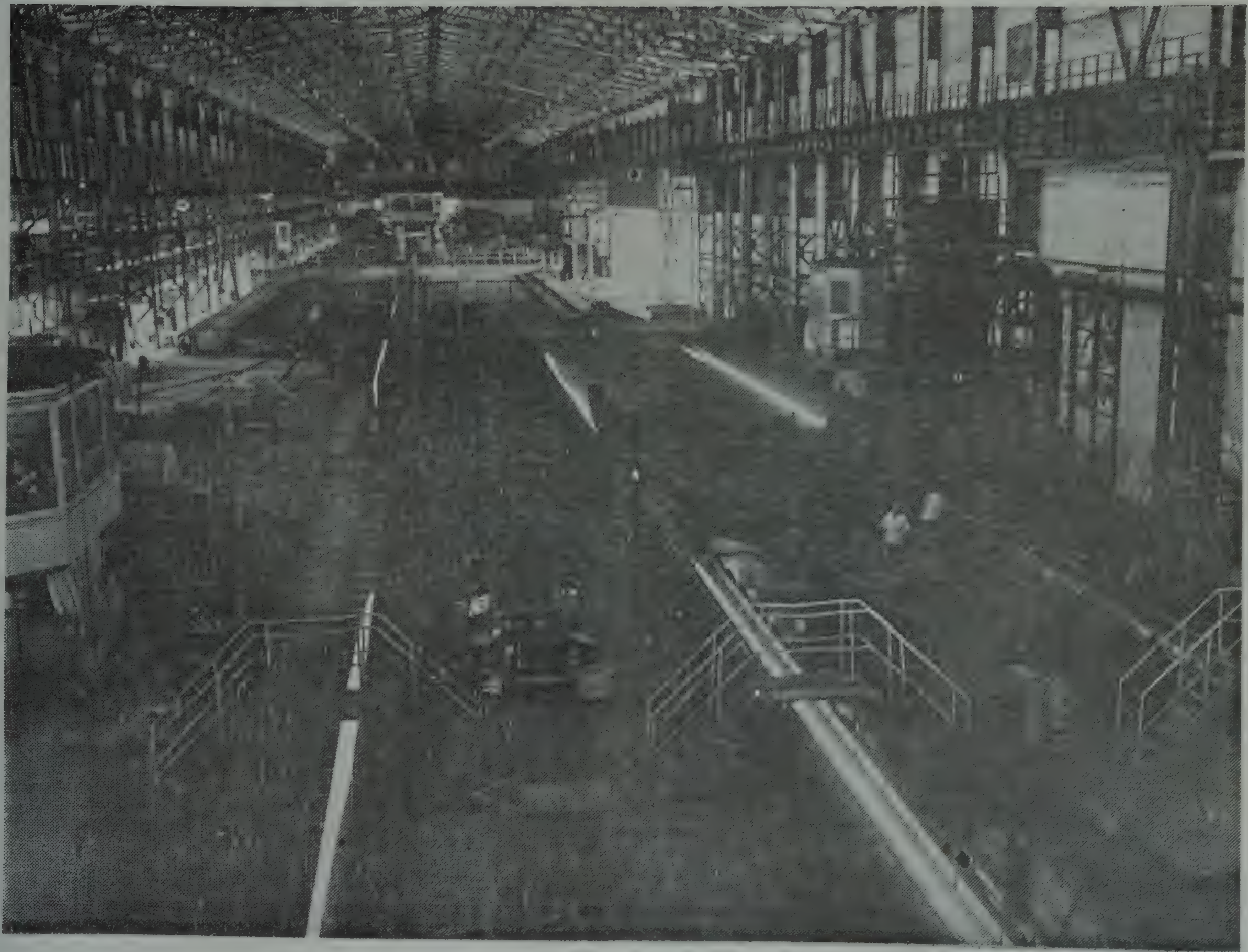
Major activities of Bridge & Roof Co. (India) Ltd. are structural fabrication, manufacture of marine freight containers, civil construction and erection of structural equipment.

The Indian Oil Blending Ltd. is a wholly owned subsidiary of Indian Oil Corporation Ltd and is engaged in blending lubricants.

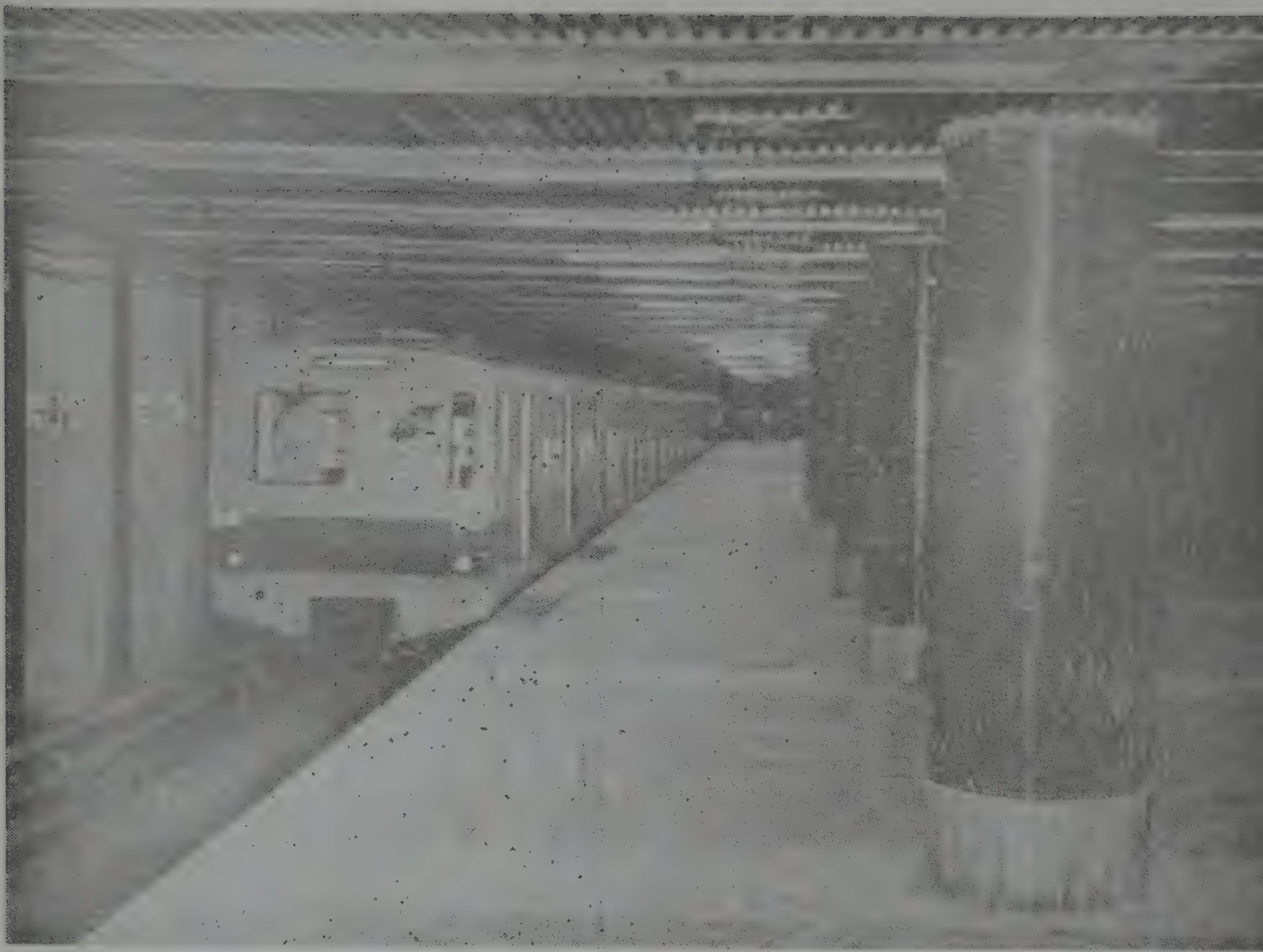
RESEARCH AND DEVELOPMENT

ONGC has established three research institutes, namely, the Keshavdev Malaviya Institute of Petroleum Exploration, the Institute of Drilling Technology and the Institute of Reservoir Studies.

Established in 1963 in Dehra Dun the Keshavdev Malaviya Institute of Petroleum Exploration undertakes applied research in petro-



A view of the merchant mill of Bhilai Steel Plant



First Metro Railway began its commercial run in Calcutta on 24 October 1984. Photo shows the platform of the Park Street station with the train.

A view of the Vellore Television Relay Centre which was inaugurated in July 1984. This is one of the relay centres being set up in the country as

The 554.7-metre long bridge over Yamuna provides a bypass between the states of Rajasthan and Uttar Pradesh.

The meeting of the Commonwealth Heads of Government was held in New Delhi from 23—29 November 1983. Photo shows the Prime Minister, Indira Gandhi delivering the welcome address at the opening of the leum geology, exploration geophysics, well- logging techniques and others.

The Institute of Drilling Technology, also at Dehra Dun, undertakes research to make drilling faster, safer and more economical. It develops drilling techniques to improve the properties of drilling fluids and mud additives.

The Institute of Reservoir Studies in Ahmadabad undertakes research in reservoir engineering. It has 15 main laboratories and a development group at Ahmadabad with a reservoir modelling group and a field development group at Dehra Dun.

ONGC has also a Computer Centre at Dehra Dun to process seismic data.

NON-CONVENTIONAL ENERGY SOURCES

The Government has given priority to the promotion and development of New and Renewable Sources of Energy (NRSE). These are viewed both as supplement to the existing and available conventional sources of energy and also as an answer to the energy needs of rural India. Energy planners and scientists all over the world are now thinking in terms of decentralised energy systems. India has also taken a lead in this regard by setting up a Commission for Additional Sources of Energy (CASE) on 12 March 1981 and the Department of Non-Conventional Energy Sources on 6 September 1982 in the Ministry of Energy. While the overall responsibility for formulating the policies and programmes rests with CASE, the Department of Non-Conventional Energy Sources makes arrangements for their implementation.

The programme for the development of NRSE as embodied in the Sixth Plan document has the following objectives :

(a) to implement on a large scale, programmes such as those of energy forestry and biogas, where technology development has already reached a stage which permits field applications,

(b) to carry out field testing and demonstration on a countrywide basis of technologies having the potential to become commercially viable in the next 5–7 years; and

(c) to intensify research and development of other technologies where the potential is likely to be available over a longer time horizon.

There has been a rapid expansion in the scale and range of activities for the development and utilisation of NRSE in the past few years. A number of new and promising techniques and systems are now available for demonstration and trial and in some cases for commercialisation. Today, there are more than 75 manufacturers engaged in the manufacture/development of various renewable energy systems and devices. Several Departments in the Central Government have started adopting renewable energy systems and devices such as water heating systems, windmills, photovoltaics, etc. It is estimated that various programmes for exploitation of non-conventional sources of energy are likely to generate or save substantial quantities of energy by the end of the current year. By the end of century, the expectation is that 20 per cent of all energy would be available from non-conventional sources.

Biogas Development

Biogas is perhaps the most important component of renewable ener
supplies. A byproduct of biogas is a very valuable enriched fertiliz
Its other benefits include reduction of indiscriminate felling of tr
for fuel, improvement in sanitation, reduction in the incidence of e
disease among village women and easy and efficient cooking. One
the greatest merits of biogas is its versatility. It can be used f
cooking, lighting, or for generation of power for all the various us
which electricity can be put to.

The National Project for Biogas Development (NPBD) was san
tioned in November 1981 as a Central sector scheme with an outl
of Rs 50 crore envisaging a target of setting up of 4 lakh biogas un
during the Sixth Plan period. Central grants are available to t
states for giving subsidy to those who want to set up biogas plan
Subsidy is available to all rural citizens. The Khadi and Villa
Industries Commission is another important implementing agency f
NPBD.

With the view of creating a cadre of trained manpower at differe
levels, training programmes are also in operation. Regional Biog
Centres at Coimbatore and Udaipur organise different types of trai
ing programmes for building up technical back stopping capability f
the biogas programme, location specific operational research/fie
work, preparation of extension and publicity materials and organisin
exhibitions and seminars.

There is a programme for setting up large size community an
institutional biogas plants. These will be based on effluents an
sewage. The community biogas plants (CBP) are defined as plan
with a minimum capacity of 45 cu.m/day and meeting the fuel nee
of at least 25 families. For institutional biogas plants (IBP), no si
limitation need be fixed as the capacity of the plant would depen
on the availability of wastes at the institution. Till the end
January 1984, 125 CBPs/IBPs were taken up for construction; o
of these 31 plants have been commissioned.

Cooking Energy

The greatest part of energy consumed in our villages is for cookin
food. The traditional appliance used for cooking is the *chulh*
(wood stove) which burns firewood, agricultural waste or cowdun
in an extremely inefficient manner. The energy efficiency of th
traditional *chulha* ranges from as low as 2 per cent to about 15 pe
cent. The traditional *chulha* emits smoke which is dangerous t
health and environment. Since it uses a lot of fuel which is collecte
by women and children, it is obvious that the less efficient th
chulha, the greater the need for fuel and the time taken in collectin
the fuel, and the resultant loss of valuable resources and time. It i
estimated that even 1 per cent increase in the efficiency of tradition
Chulhas will result in saving of 30 lakh tonnes of wood per yea
Considering, therefore, that improved *chulhas* as the best an
cheapest measure to mitigate the health hazards and the drudger
of rural women and the most effective fuelwood conservation metho
the Department launched in December 1983 a national project o
demonstration of improved *chulhas* to be implemented during th
remaining period of the current plan.

The project aims at creating one lakh trained workers predomi
nantly women, and construction installation of at least 5,00,00
improved *chulhas* in rural household. The project envisages th
creating of 5,000 smokeless villages.

lar Energy

India gets a significant level of solar radiation over wide areas for a major part of the year because of its favourable geographical position. Systematic efforts of research and development of solar energy have already been initiated in the country to tap this renewable energy which does not pose any problem to the environment. A simple and more common mode of solar energy utilisation is solar thermal conversion. A large number of applications in the area of solar thermal conversion, particularly, those which require low grade thermal energy, have already been found useful both for urban as well as rural areas. These include cooking, water heating, water desalination, space heating, crop drying, refrigeration, etc. Efforts are being made in a number of research and development organisations in the country to develop economically viable solar collectors for high temperature applications. A countrywide demonstration programme has been taken up by the Government to identify technical, social, economical problems and possible barriers to large scale deployment of solar devices. Efforts are also underway to disseminate the available technology in this field to reduce the pressure on fossil fuels in these sectors. Significant saving in the conventional fuels have been reported through existing field trial/demonstration projects.

The field trial/demonstration programme has the following objectives : (a) Evaluating performance of various solar thermal devices and systems under actual field conditions for feed back on further improvements in their performance, reliability and life; (b) Demonstrating operational characteristics to the users particularly to the industrial and commercial users; and (c) Creating awareness among the people about the potential of these systems. Under this programme, different systems like water heaters, dryers, wood seasoning systems, desalination systems, cold storage, power generating systems and pumps are being installed. The demonstration of various solar thermal systems has shown that extensive use of these devices in industries, hospitals, hotels, domestic and institutional sectors has tremendous potential for conserving conventional fuels and their large scale use will have a favourable effect on the national economy.

Several models of solar cookers have been developed in the country. These include simple hot box type solar cookers with one reflector, solar ovens with multiple reflectors and solar concentrators. Solar cookers are being sold under a programme of subsidy.

In the area of solar photovoltaics, the technology for the manufacture of solar cells and modules has been developed in the country. A five year programme for pilot scale production of photovoltaic devices and systems for various applications is being implemented at the Central Electronics Ltd., with the sponsorship of the Department of Non-Conventional Energy Sources. A large number of solar photovoltaic pumps have been installed in different parts of the country for purposes of demonstration and evaluation. In many cases the pumps are providing water for drinking purposes in rural areas and for micro irrigation. Several lighting systems and Radio and TV sets have also been installed. An intensive programme of research and development in this area is also being supported by the Department.

Energy

Wind energy can be used for water pumping and also for power generation. Under a demonstration programme, 575 windmills have, so far been installed in the country for water pumping purposes. Thirteen small aero-generators of 1 to 3 kw capacity are being supplied to certain remote areas for trial and demonstration purposes. The Department has entered into an agreement with the CSIR according to which wind monitoring stations will be set up and indigenous capability built up for developing medium size aero-generators.

An imported wind generator has been installed for the first time in India to operate a lighthouse at Kanai Creek, Gujarat. The electric generator which gives a power output of 300 watts has been installed on an eighteen metre high tower. The generator will charge a storage battery which, in turn, will operate an electrically operated revolving lighthouse.

Geothermal Energy

A cold storage and a power plant based on geothermal energy at Manikaran, Kullu district, Himachal Pradesh are in the testing phase. The pilot cold storage plant is in the final stage of completion.

Energy from Urban Waste

One of the major thrust areas to be developed is the utilisation of urban waste both solid and liquid for generating energy and also improving the urban environment in the process.

A 30 crore tonne per day capacity incineration plant is proposed for Delhi. This plant will incinerate solid urban refuse and will convert the heat 3 mw electricity. The project is expected to cost Rs 18 crore. A pyrolysis plant, using solid urban refuse, is proposed to be set up at Bombay so as to extract liquid fuel from the solid refuse through the process of pyrolysis.

A project had been undertaken at Timarpur in Delhi where 3.745 mw of power will be generated from 300 tonnes per day of muncipal solid waste. Another project for generation of 6 mw of surplus power from bagasse at a co-operative sugar mill in Tamil Nadu was also being taken up. Successful implementation of this project could lead to adoption of technology by other sugar factories and could result in approximately 2,000 mw surplus power generation in the country from bagasse during the crushing season.

Growing concern for environmental protection and the rapidly increasing wastes resulting from population growth lent urgency to the need for recycling of organic wastes. The Department of Non-Conventional Energy Sources had, therefore, adopted integrated approach to the management of wastes including energy recovery, environmental preservation and reuse of digested sludge, bio-manures and treated effluents. For this purpose close liaison was being maintained with other agencies such as Environment, Works and Housing, Agriculture and state governments and local municipalities for effective implementation of energy recovery systems.

19 INDUSTRY

During the last three decades of planned development industrial production has made rapid strides both in terms of variety and quality. The production increased at an average growth rate of about 5 per cent per annum during 1970-83. While almost all groups of industries contributed to this increase, the growth has been particularly marked in areas, such as, petroleum products, chemicals and chemical products, metal products, electronics and other electrical machinery, transport equipment and power generation. The share of manufacturing sector in the net domestic product at constant prices increased from 13.4 per cent in 1970-71 to 15 per cent in 1982-83.

The different five year plan periods saw the expansion and diversification of the industrial structure with the establishment of new units in the existing fields as well as the setting up of new enterprises. As a result, the number of industrial units has increased significantly. In 1951, there were only two major units producing iron and steel. There are now six major steel plants with a capacity of about 87 lakh tonnes. They produced about 73 lakh tonnes of saleable steel during 1982-83. The steel produced by these plants has provided the basis for achieving the self sufficiency in making a number of engineering goods from pin to giant machinery. In the field of new industries, agricultural tractors, electronics and fertilizer industries, which practically did not exist in 1951, have progressed to such an extent that the import of these products has been brought down to the minimum. The drug and chemical industries have also made rapid progress. The textile industry is no longer confined to the cotton and jute textiles. Today, there are quite a few units producing different types of synthetic fibres. The machine building industry, too, has made rapid strides. The engineering industry can supply virtually the entire requirement of power generating equipment, equipment for railways, road transport and communications. Self sufficiency has been reached with regard to sugar and cement machinery, power boilers, material handling equipment and a large number of consumer durables.

An important feature of industrial growth in the country after Independence has been the rapid expansion of the public sector. In 1951, there were only five non-departmental public undertakings, with an investment of Rs 29 crore. On 1 April 1983, they numbered 209 with an investment of Rs 30,039 crore. These enterprises produce diverse products such as steel, coal, aluminium, copper, heavy and light engineering products, fertilizers, basic chemicals, drugs, minerals, petroleum products, locomotives, aircraft and ships.

INDUSTRIAL POLICY

Independent India's industrial policy was first announced in 1948. This envisaged a mixed economy with an overall responsibility of the Government for planned development of industries and their regulation in the national interest. While it reiterated the right of the State to acquire an industrial undertaking in public interest, it reserved an appropriate sphere for private enterprise. The policy was revised in 1956 following Parliament's acceptance in 1954 of a socialistic pattern of society as the national objective. Under the revised policy, industries specified in Schedule A (enumerated below) are the exclusive responsibility of the State while industries in Schedule B (also enumerated below) are to be progressively State-owned, but private enterprise is expected to supplement the efforts of the State in these fields. Future development of industries falling outside the two Schedules would, in general, be left to private enterprise. Notwithstanding this demarcation, it is always open to the State to undertake any type of industrial production.

Schedule A Industries : Arms and ammunition and allied items of defence equipment; atomic energy; iron and steel, heavy castings and forgings of iron and steel, heavy plant and machinery required for iron and steel production, for mining, for machine tool manufacture and for such other basic industries as may be specified by the Government; heavy electrical plant including large hydraulic and steam turbines; coal and lignite; mineral oils; mining of iron ore, manganese ore, chrome ore, gypsum, sulphur, gold and diamonds; mining and processing of copper, lead, zinc, molybdenum and wolfram; minerals specified in the Schedule to the Atomic Energy (Control of Production and Use) Order 1953; aircraft, air transport; railway transport; shipbuilding; telephones and telephone cables, telegraph and wireless apparatus (excluding radio receiving sets), generation and distribution of electricity.

Schedule B Industries : All other minerals except minor minerals as defined in Section 3 of the Minerals Concession Rules. 1949; aluminium and other non-ferrous metals not included in Schedule A; machine tools; ferro-alloy and tool steel; basic and intermediate products required by chemical industries, such as the manufacture of drugs, dyestuffs and plastics, antibiotics and other essential drugs, fertilizer; synthetic rubber; carbonisation of coal; chemical pulp; road transport and sea transport.

Regulation of Industry

In line with the policy first announced in 1948, the Constitution was amended and the Industries (Development and Regulation) Act, 1951, was enacted. Under this, industries listed in the first Schedule to the Act are required to be licensed by the Government. The Act authorises the Government to examine the working of any such industrial undertaking and to issue directions which it considers necessary. If the undertaking continues to be mismanaged the Government is empowered to take over its management or control. The Act empowers the Government to secure equitable distribution and fair prices of any article produced by the scheduled industries.

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sing

An important objective of the industrial policy is to prevent the emergence of private monopolies and the concentration of economic power in the hands of a small number of individuals. The problem was studied by the Mahalanobis Committee on Distribution of Income and Levels of Living (1960), the Monopolies Enquiry Commission (1964), and the Industrial Licensing Policy Inquiry Committee (ILPIC) (1967). The Administrative Reforms Commission and the Planning Commission also made various recommendations. As a result, the Monopolies and Restrictive Trade Practices (MRTP) Act was passed in 1969 and under the Act the Monopoly and Restrictive Trade Practices Commission was appointed in 1970. The industrial licensing policy was modified in 1970 and again in 1973.

The latest modifications reaffirmed that the Industrial Policy Resolution of 1956 would continue to govern Government's policies in the industrial sphere. All industries of basic and strategic importance or in the nature of public utility services would continue to be in the public sector. Industries which are essential and require investment on a scale, which only the State in the present circumstances could provide, would also be in the public sector.

A large industrial house for licensing purposes would mean a house having assets along with assets of inter-connected undertakings (as defined in the MRTP Act, 1969), of not less than Rs 20 crore as against assets exceeding Rs 35 crore provided by the ILPIC.

The list of industries, which are open for larger industrial houses and foreign companies and subsidiaries of foreign company has recently been re-defined. This covers 24 groups and was announced in April 1982. They cannot, however, participate in the production of any item reserved for the public sector as mentioned in Schedule A of the small scale sector.

The larger industrial houses would ordinarily be excluded from the industries not included in the 24 groups except where production is predominantly for exports. The minimum export obligation in such cases is to be at least 60 per cent of the additional production (75 per cent in the case of industries normally reserved for small scale units). According to the policy for development of backward areas announced in April 1983, the level of export obligation in respect of non-reserved items can be reduced to 50 per cent in the case of category B backward districts and 30 per cent in the case of category A districts. The investment of foreign concerns would continue to be subjected to the guidelines on the dilution of foreign equity and would be examined with special reference to technological aspects, export possibilities and the overall effect on the balance of payments.

Competent small and medium entrepreneurs would be preferred *vis-a-vis* the larger industrial houses and foreign concerns in the setting up of new capacity. Licensing policy would seek to promote production of ancillaries in the medium or small scale sector. Co-operative and small and medium entrepreneurs are to be encouraged to participate in the production of mass consumption goods. Other investors would be allowed to participate only if there are special factors, such as, sizeable economies of scale resulting in reduced prices, technological improvements, large investment requirement, substantial expor possibilities or as part of modernisation. The co-operative secto would also get preference in the licensing of industries which process agricultural raw materials, such as, sugarcane, jute, cotton or agricultural inputs like fertilizers.

The policy of reservation for the small scale sector (involving investment in machinery and equipment up to Rs 20 lakh) and ancillary industries (involving investment in plant and equipment up to Rs 25 lakh) has been continued. The Government has extended the area of reservation to 872 industries for this sector keeping in view its performance and potentialities. The reservation of items for exclusive production by the small scale industrial undertaking is being done since February 1970 under Section 29-B of the Industries (Development and Regulation) Act 1951. However, in the recent past, certain doubts were raised about the power of the Government to reserve such items for small scale sector. With a view to put the matter beyond doubt, an Ordinance was issued on 12 January 1984 amending the Industries (Development and Regulation) Act to provide for the reservation of certain selected items for exclusive production in the small scale sector. The ordinance has since been replaced by Industries (Development and Regulation) Amendment Act, 1984.

The exemption limit for licensing purposes, has since been raised upto Rs 5 crore by way of fixed assets in land, building and machinery. This exemption would not apply to larger industrial houses, dominant undertakings and to foreign companies including their branches and subsidiaries.

Each proposal for establishing a joint sector project would be judged and decided on its merits in the light of Government's social and economic objectives. The undertakings covered by the MRTP Act would not be allowed to use the device of joint sector projects for entry in industries from which they are otherwise precluded. The Government would also ensure for itself an effective role in guiding policies, management and operation of joint sector companies.

Government has identified and notified certain backward districts areas for purpose of development. Government has also decided to give special consideration to applications showing preference in establishing industrial undertakings in such backward areas. Backwar areas in the country have been classified in three categories:

(i) Category A comprising of no industry districts plu special regions (118 districts).
(ii) Category B comprising of 55 districts.
(iii) Category C comprising of 113 districts.

Liberalisation of Licensing Policy

In pursuance of the liberalised licensing policy, the Governmen decided to exempt from the normal industrial licensing procedur medium entrepreneurs to enable them to set up industrial capaciti based on indigenous equipment and local raw materials and also utilise to a fuller extent the existing installed capacities. Accordingl 24 medium industries were exempted from the licensing provisio for setting up a new undertaking, substantial expansion of the existi capacity and manufacture of new articles.

Another 29 medium sector industries were allowed fuller utilisation of the installed capacities. This was done with the twin objectives of containing inflation and increasing production in key and important industries.

To liberalise investment procedure, powers have been delegated to administrative ministries to dispose of certain types of applications including those for diversification, carry-on-business licences, and extension of validity period of letter of intent or industrial licences.

Automatic growth has been allowed to 24 groups of industries which are open for larger industrial houses and foreign concerns along with other applicants and 15 export oriented engineering industries. These are allowed to grow at the rate of 5 per cent per annum or up to a ceiling of 25 per cent in a five-year period ending 14 August 1985 in one or more steps over their licensed capacity provided the item is not reserved for small scale sector or public sector and the undertaking is not a dominant unit in the particular line of manufacture within the meaning of MRTP Act.

A scheme for providing special facilities to cent per cent export oriented units has been devised. They include exemption from import duty on capital goods, raw materials and components without indigenous angle scrutiny, etc. Further, the MRTP Act has been amended to exclude exports for the purpose of determining the dominance of the units in terms of the MRTP Act. A Special Board to be serviced by the secretariat for industrial approvals has been set up to consider all the applications for setting up cent per cent export oriented units.

It was decided in September 1980 to recognise installed capacities which were in excess of licensed capacities in 34 selected industries of importance to national economy and those engaged in production of articles of mass consumption. Again in April 1982, in order to give a positive production orientation to the industrial economy, it was decided that the capacity on the industrial licences/registration certificates would be re-endorsed at the level of highest production achieved during any of the five years period prior to 31 March 1982 plus 1/3rd thereof, if production plus 1/3rd thereof is more than the licensed capacity plus 25 per cent, thereof. This facility is, however, not available in respect of items reserved for small scale sector and 74 specified items subject to capacity constraints. The benefits of this scheme to the MRTP/FERA (Foreign Exchange Regulation Act) companies would, however, be limited to the industries included in Appendix I to press note dated 2 February 1973. It is also subject to the condition that dominance of the dominant undertaking does not further increase. It has been decided to extend the scheme of re-endorsement of capacity on industrial licences/registration certificates for 1983-84 and 1984-85.

With a view to utilising full installed capacity, diversification has been allowed in industrial machinery, machine tools, electrical equipment, steel castings, steel forgings, steel pipes, passenger cars and power driven two-wheeler industry within the overall licensed capacity of a particular industrial undertaking.

A technical development fund has been created to cover the foreign exchange needs for import of equipment having an impact on quality and quantity output, technical know-how, foreign consultancy services and import of drawing and designs.

To encourage commercial exploitation of technology developed by national laboratories, industrial undertakings, other than those falling within the purview of the MRTP Act and FERA, can set up capacities based on technology developed by any of the laboratories established by the CSIR and laboratories approved by the Department of Science and Technology without obtaining an industrial licence.

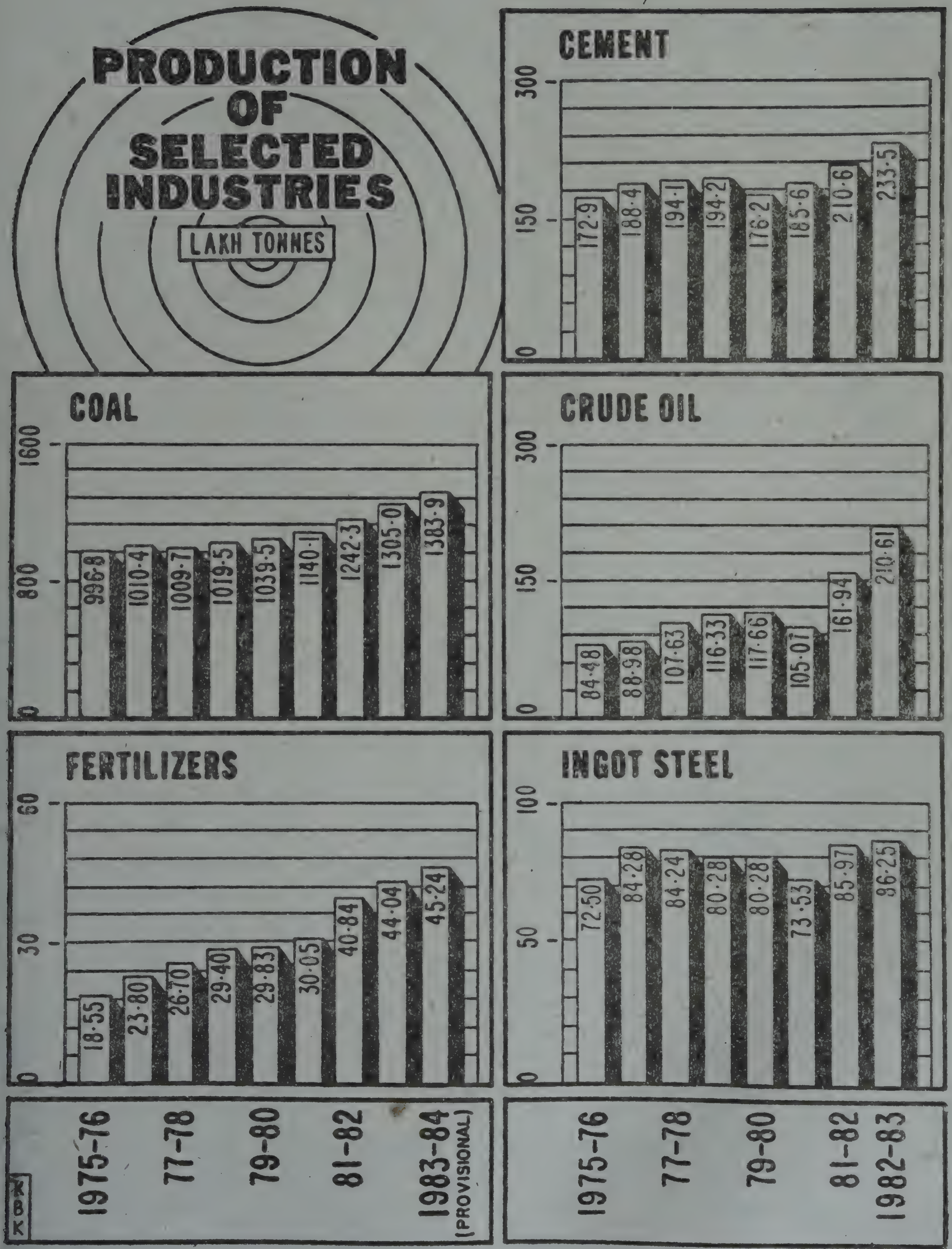
Non-resident Indians have been allowed facilities to import plant and machinery for the establishment of industrial projects in India from their own savings in foreign exchange. These facilities have been liberalised so as to attract remittance and investment in industries in the priority and the export oriented sectors. A Special Approval Committee has been constituted to clear all industrial investment proposals emanating from non-resident Indians. This Committee will decide and monitor the progress of all applications received from non-resident Indians regarding industrial investments involving : (a) industrial licences/registration/permission; (b) foreign collaboration; and (c) import of capital goods. This decision has been taken to provide further fillip to industrial investments by non-resident Indians and to clear their applications expeditiously.

DEVELOPMENT OF INDUSTRIES

The history of organised industry in India may be traced to 1854 when the real beginning of the cotton mill industry was made in Bombay with predominantly Indian capital and enterprise. The foundations of jute industry were laid near Calcutta in 1855, mostly with foreign capital and enterprise. Coal-mining also progressed about this time. These were the only major industries which had developed substantially before the First World War. During and after the First and Second World Wars a somewhat more liberal policy was adopted by the authorities, such as, a discriminating protection policy, which gave impetus to industrial development. Several industries rapidly expanded and a number of new industries came up, such as, steel, sugar, cement, glass, industrial chemicals, soap, vanaspati and some branches of engineering. But their production was neither adequate in quantity for meeting even the low level of internal demand nor diversified in character.

Progress during First and Second Plans

During the First and Second Plans the growth and diversification of industry were remarkable particularly in the Second Plan. Three new steel plants, each of 10 lakh ingot tonnes capacity, were set up in the public sector and the capacity of the two existing steel works in the private sector was doubled. Foundations were laid of heavy electrical and heavy machine tools industries and heavy machine building and other branches of heavy engineering industries. The production of machinery for cement and paper industries was started for the first time. In chemical industries, the advance was on a wide front, leading not only to large units and greatly increased output of basic chemicals, such as, nitrogenous fertilizers, caustic soda, soda ash and sulphuric acid, but also in the manufacture of a number of new products like urea, ammonium phosphate, penicillin, synthetic fibres, industrial explosives, polythylene and dye stuffs. The output of many other industries, like bicycles, sewing machines, telephone and electrical goods, increased substantially. New skills were learnt by the workers and a large and growing class of industrial managers came into being. Organised industrial production practically doubled


PRODUCTION OF SELECTED INDUSTRIES
LAKH TONNES
CEMENT
300
150
0
172·9
188·4
194·1
194·2
176·2
185·6
210·6
233·5
COAL
1600
800
0
996·8
1010·4
1009·7
1019·5
1039·5
1140·1
1242·3
1305·0
1383·9
CRUDE OIL
300
150
0
84·48
88·98
107·63
116·33
117·66
105·07
161·94
210·61
FERTILIZERS
60
30
0
18·55
23·80
26·70
29·40
29·83
30·05
40·84
44·04
45·24
INGOT STEEL
100
50
0
72·50
84·28
84·24
80·28
80·28
73·53
85·97
86·25
1975-76
77-78
79-80
81-82
1983-84
(PROVISIONAL)
1975-76
77-78
79-80
81-82
1982-83
KDK

in these ten years; the index of industrial production rose from 100 in 1950-51 to 194 in 1960-61. New industrial townships and factories sprang up in the enviros of the main cities of the country.

Progress during Third Plan and Annual Plans

Industrial progress was markedly uneven during the eight years which comprised the Third Plan, and the subsequent Annual Plans. In the first four years, conditions were relatively favourable for industrial investment and growth and the progress achieved was significant. Thereafter, for nearly three years the economy was subjected to considerable stress and strain and the growth rate in industrial production declined, first slowly and then steeply, till it reached virtual stagnation. But in the last year of this period, 1968-69, there were distinct signs of recovery.

The decline after 1964-65 was attributable to several factors, of which the most important were the series of dislocations caused by the hostilities in 1965 and two successive droughts in 1965-66 and 1966-67. Many industries were severely affected by the shortage of raw materials and components arising from the pause in external aid in 1965.

Among industries in which Third Plan production targets were fully or nearly realised by 1965-66 were aluminium, automobiles, electric transformers, cotton textile machinery, machine tools, sugar, jute, textiles, power-driven pumps, diesel engines and petroleum products. On the other hand, in some of the important industries like steel and fertilizers, there was a considerable shortfall in production. In subsequent years, there was a step-up in production in certain industries, such as, fertilizers, heavy chemicals, cement and petroleum products. In spite of this uneven performance, significant achievements contributing towards the realisation of diversified industrial structure were made during this period. Substantial capacity was created in many new lines. Several of the large projects launched at the commencement of the Third Plan were completed and brought into production. In particular, in the field of heavy engineering and different units in the Heavy Engineering Corporation, Mining and Allied Machinery Corporation and of heavy electrical projects made it possible, largely through indigenous efforts, the expansion of further capacity in vital sectors like iron and steel, mining and power generation. In the field of rail and road transport and communications, virtual self-sufficiency for the supply of equipment and rolling stock was achieved. Machinery manufacturing capacity for a variety of traditional industries like textiles, sugar and cement was developed and design and engineering capabilities were expanded. Process technology was either acquired or developed to enable the planning, designing and construction of industrial projects with maximum indigenous efforts in fields like fertilizers, rayon and dissolving pulp. There was an appreciable increase in the production capacity of steel and non-ferrous metals. Progress was made in the expansion of capacity in petroleum, fertilizer and petro-chemical industries.

Progress during Fourth Plan

In the Fourth Plan, the performance of the industrial sector fell short of expectations both in terms of production and investment. The investment of industrial development in the public sector was estimated to be about Rs 2,700 crore as against the provision of Rs 3,050 crore. While the pace of investment in some of the sectors like iron ore, petroleum and petro-chemicals was generally satisfactory this was not so in respect of other sectors like iron and steel, non-ferrous metals, fertilizers and coal. In fact, the shortfall in overall investment was much larger, if account was taken of the escalation in project costs.

A number of factors were responsible for the unsatisfactory growth in industrial production. While in some of the critical industries like steel and fertilizers, production remained substantially below the installed capacity on account of operational problems in different units, other agro-based industries like sugar and textiles showed an erratic trend. The inadequate pace of investment resulted in a reduced demand for industrial machinery, adversely affecting the level of output of the capital goods industries. Production in other engineering industries was also hit by the shortage of steel and non-ferrous metals.

On the positive side, there was a substantial production increase in several industries like alloys and special steels, aluminium, automobile tyres, petroleum refinery products, electronics, machine tools, tractors and heavy electrical equipment. The production in the public sector undertakings also showed an encouraging rise towards the closing years of the Fourth Plan. Apart from this, the industrial base was further expanded and a greater degree of sophistication and self-reliance achieved.

ogress during
fth Plan

The Fifth Plan laid emphasis on rapid growth of core sector industries and increase in the production of export-oriented goods and articles of mass consumption. The average rate of growth of industrial sector was estimated at 7 per cent per annum in the revised plan. The sharp increase in the prices of foodgrains, fertilizers and oil seriously upset the assumptions on which the Fifth Plan had been framed. These new developments also lent urgency to a time-bound programme of action in order to achieve a measure of self-reliance in food and energy. The successive Annual Plans had to be formulated on the basis of these considerations.

The Fifth Plan envisaged a total outlay of Rs 53,411 crore, comprising Rs 37,250 crore for public sector and Rs 16,161 crore for private sector, respectively. However, due to the emergence of an unprecedented inflationary situation as a result of a steep increase in oil prices in November 1973, the Plan had to be drastically modified in 1976. The revised plan envisaged a total outlay of Rs 69,351 crore comprising Rs 42,303 crore for public sector and Rs 27,408 crore for the private sector, respectively. The public sector outlay included Rs 3,000 crore as investment on inventories; the remaining public sector outlay of Rs 39,303 crore as current outlay.

Of the revised public sector outlay of Rs 39,303 crore during the Fifth Plan, the share of industries and minerals sector amounted to Rs 10,201 crore or 25.9 per cent of the total outlay. The outlay for large and medium industries was Rs 9,691 crore and that of village and small industries Rs 510 crore.

ess during
Plan

The Sixth Plan envisaged a total public sector plan outlay of Rs 97,500 crore. The overall outlay earmarked for large industries and minerals sector is Rs 20,407 crore including coal and petroleum. A major part of the outlay amounting to Rs 19,018 crore is in the Central sector and the balance of Rs 1,389 crores is for the state sector. Besides this, private sector investment during 1980-85 is estimated at Rs 30,323 crore. The outlay for village and small industries is Rs 1,780 crore.

Industrial policy during the Sixth Plan aims at optimum utilisation of existing capacities, quantitative increase in output of consumer, intermediate, capital goods and improvement of productivity. It aims at an annual growth rate of 8 per cent of industrial production during the five year period. The average annual growth rate achieved during the first three years of Sixth Plan is 4 per cent in 1980-81, 8.6 per cent in 1981-82 and 3.9 per cent (provisional) in 1982-83. The average growth rate during the first three years of the Plan is thus 5 per cent per annum.

A review of performance for the first three years of the Sixth Plan reveals that while targets are likely to be achieved in some important industries, e.g., petroleum, paper and paper board, commercial vehicles, scooters, motor cycles and mopeds, machine tools, etc., shortfalls are likely in a number of other important industries such as steel, non-ferrous metals, textiles, fertilizers, locomotives, railway coachings, electric cables and transformers. The expected shortfalls in physical production of a number of industries in 1984-85 are primarily due to delays in the execution of projects, shortages of power in a number of states and demand constraints. The number of on-going schemes in this sector is large, and many of these will spillover to the Seventh Plan.

PUBLIC SECTOR

The need for the creation of the public sector was felt after attaining Independence. The aim was to reverse the economic policies followed by the alien rulers prior to 1947, when huge profits earned by foreigners were repatriated out of the country, and for greater production and proper distribution of wealth. The role and scope of the public sector was defined by the Industrial Policy Resolutions of 1948 and 1956 in the context of a dynamic national policy. The resolution of 1956 said : "The adoption of the socialistic pattern of society as well as the need for planned and rapid development require that all industries of basic and strategic importance or in the nature of public utility services, should be in the public sector". This concept was incorporated in the First and Second Plans. The idea was to provide a firm base for setting up core industries like power coal, steel, fertilizers, atomic energy and machine building in the public sector and to leave the rest for the private sector.

In the pre-Independence era, only the railways, post and telegraph department, port trusts and some ordnance factories were being run under state control but in the last three decades the public sector has emerged as a major factor in the country's economic growth The public sector in industry comprises public utilities like the railways, road transport services, ports, post and telegraph, power and irrigation projects; departmental undertakings of the Central and state governments and various defence production establishments and industrial and commercial enterprises which derive their finance almost wholly either from the Government or the state government in the form of equity capital and loans.

On 31 March 1983, there were 209 Central Government public enterprises. Of this 140 were enterprises producing and selling goods

53 were rendering services which were under operation. The number of enterprises and the investment in them since the commencement of the First Plan is shown in table 19.1.

Investment (equity and loan) grew from Rs 4,301 crore in 1969-70 to Rs 30,039 crore in 1982-83. Sectorwise distribution of investment is shown in table 19.2.

TABLE 19·1
INVESTMENT
IN PUBLIC
SECTOR

	Total investment in crore	Number of Enterprises
At the commencement of the First Plan	29	5
Second Plan	81	21
Third Plan	953	48
At the end of Third Plan (as on 31 March 1966)	2,415	74
At the commencement of the Fourth Plan	3,902	85
Fifth Plan	6,237	122
At the end of Fifth Plan (as on 31 March 1979)	15,602	176
At the commencement of the Sixth Plan	18,225	186
As on 31 March 1981	21,102	185
As on 31 March 1982	24,916	205
As on 31 March 1983	30,039	209

TABLE 19·2
INVESTMENT
IN PUBLIC
SECTOR
SECTOR-WISE

(Rs in crore)

Category	At the end of 1981-82		At the end of 1982-83	
	Investment	Percentage to total investment	Investment	Percentage to total investment
1	2	3	4	5
1. Enterprises under construction	1,442·62	5·79	1,075·53	3·58
2. Enterprises producing and selling goods				
(a) Steel	4,907·84	19·70	5,147·24	17·14
(b) Minerals and metals	2,342·67	9·40	2,639·45	8·79
(c) Coal	2,724·54	10·93	3,268·01	10·88
(d) Power	1*	1*	1,791·89	5·97
(e) Petroleum	2,108·53	8·46	3,034·12	10·10
(f) Chemicals, fertilizers and pharmaceuticals	3,573·32	14·34	3,818·98	12·71
(g) Heavy engineering	1,226·28	4·92	1,433·46	4·77
(h) Medium and light engineering	410·72	1·65	495·19	1·65
(i) Transportation equipments.	749·75	3·01	816·61	2·72
(j) Consumer goods	559·17	2·24	691·13	2·30
(k) Agro-based	23·54	0·09	30·59	0·10
(l) Textiles	565·76	2·27	715·57	2·38
Total (2)	19,192.12	77.01	23,882.24	79·51

* Under construction

1	2	3	4	5
3. Enterprises rendering services				
1. Trading and marketing services	757 ·99	3 ·04	793 ·79	2 ·64
2. Transportation services	1,705 ·58	6 ·85	2,089 ·98	6 ·96
3. Contract and construction services	201 ·01	0 ·81	244 ·09	0 ·81
4. Industrial development and technical consultancy services	100 ·71	0 ·40	88 ·24	0 ·29
5. Development of small industries..	37 ·70	0 ·15	38 ·96	0 ·13
6. Tourist services.	48 ·76	5 ·22	1,548 ·24	0 ·26
7. Financial services.	1,300 ·69	0 ·20	78 ·29	5 ·16
8. Companies registered under section 25	61 ·45	0 ·25	78 ·89	0 ·26
Total (3)	4,213 ·89	16 ·92	4,960 ·48	16 ·51
4. Insurance companies.	67 ·19	0 ·28	121 ·00	0 ·40
Grand Total	24,915 ·82	100 ·00	30,039 ·25	100 ·00

The total turn over of the undertakings amounted to Rs. 41,984 crore during 1982-83 as against Rs. 36,482 crore in the previous year registering an increase of 15,08 percent. The pattern pf turnover in the enterprises during 1981-82 and 1982-83 is given in table 19 ·3.

TABLE 19.3
TURNOVER OF THE ENTERPRISES

(Rs in crore)

Cognate Group	Gross Turnover	
	1982-83	1981-82
1	2	3
(a) Enterprises producing goods		
1. Steel	3,408 ·18	2,981 ·63
2. Minerals and metals	664 ·63	607 ·13
3. Coal	1,919 ·54	1,549 ·09
4. Power	59 ·35	*
5. Petroleum	18,401 ·50	15,002 ·59
6. Chemicals, fertilizers, and pharmaceuticals	2,206 ·37	1,895 ·07
7. Heavy engineering	1,611 ·21	1,294 ·70
8. Medium and light engineering	1,008 ·07	892 ·05
9. Transportation equipment	813 ·59	704 ·13
10. Consumer goods	254 ·75	216 ·31
11. Agro-based products	47 ·77	46 ·90
12. Textiles	571 ·89	569 ·4
Total	30,966 ·85	25,759 ·0

1	2	3
(b) Enterprises rendering services		
1. Trading and marketing	7,975 ·61	8,100 ·57
2. Transport services	1,928 ·64	1,695 ·90
3. Contract and construction	506 ·36	351 ·82
4. Industrial development and technical consultancy	291 ·83	302 ·22
5. Development of small industries	19 ·25	15 ·24
6. Tourist services	62 ·11	49 ·09
7. Financial services	128 ·42	103 ·00
8. Section 25 companies	105 ·28	105 ·07
Total	11,017 ·50	10,722 ·91
GRAND TOTAL	41,984 ·35	36,481 ·95

* Under construction

The value of exports by the public sector undertakings during 1982-83 was Rs. 4,694 crore as against Rs 2,756 crore in the preceding year. Out of these, foreign exchange covered by the public enterprises rendering services like ship repairs, trade earnings, etc., amounting to Rs 1,305 crore in 1982-83 as against Rs 1,032 crore in 1981-82. Some of the products exported were industrial boilers, electronic instruments, machine tools, pig iron, rail coaches, steel and power station equipments.

The gross profit earned by the enterprises after providing for depreciation, but before interests and tax during 1982-83 worked out to Rs 3,469 crore. The profit after payment of interest but before tax was Rs 1,545 crore. One hundred and ten enterprises contributed profits totalling to Rs 2,520 crore, whereas 81 enterprises showed a loss of Rs 975 crore. Two enterprises neither made any profit nor any loss.

The total resources generated by the public enterprises including the contribution to the public exchequer in the form of dividends, corporate tax, excise duty, etc., between 1980-81 and 1982-83 amounted to Rs 19,641 crore.

The number of persons in the employment of the public enterprises was 20.09 lakh in 1982-83 as against 19.39 lakh in 1981-82. Average annual emoluments in public enterprises was Rs 18,009 during 1982-83 as against Rs 16,158 in 1981-82.

INDUSTRIAL PERFORMANCE

Production of selected industries in different years since 1950-51 is given in table 19.4.

The provisional index of industrial production (base : 1970=100) during 1982-83 increased by 3.9 per cent. During 1982-83, mining and quarrying sector showed an increase of 10.8 per cent, electricity generation by 7.1 per cent, food manufacturing by 14.2 per cent, chemical and chemical products by 2.4 per cent, petroleum refinery products by 10.2 per cent and basic metal industries by 7.9 per cent compared to the output in 1981-82. However, there has been decline in the output of textile industries, footwear (leather) industries, electrical machinery industries, transport equipment industries and miscellaneous manufacturing industries (during 1982-83 compared to the output in 1981-82) in the above period.

The group wise index numbers (1960=100) for 1951, 1961, 1971 and for 1980-81, 1981-82 and 1982-83 (1970=100) are given in table 19.5.

TALBE : 19.4

PROGRESS OF INDUSTRIAL PRODUCTION (SELECTED INDUSTRIES)

Industry (Unit)	1950-51	1960-61	1970-71	1980-81	1981-82	1982-83 (P)
I. MINING						
1. Coal (including lignite) (lakh tonnes)	328	557	763	1,188	1,301	1,371
2. Iron Ore (lakh tonnes)[1]	30	110	325	422	408	416
II. METALLURGICAL INDUSTRIES						
3. Pig iron (lakh tonnes)	16·9	43·1	69·9	95·5	96·9	95·8
4. Steel ingots (lakh tonnes)[2]	14·7	34·2	61·4	73·5	86·0	86·2
5. Saleable steel (lakh tonnes)[3]	10·4	23·9	44·8	62·8	72·6	72·9
6. Steel castings ('000 tonnes)	—	34	62	71	83	86
7. Aluminium (virgin metal) ('000 tonnes)	4	18·3	168·8	199·0	206·8	208·1
8. Blister Copper (virgin metal) ('000 tonnes)	7·1	8·5	9·3	25·3	27·4	34·6
III. MECHANICAL ENGINEERING INDUSTRIES						
9. Machine tools (Rs crore)	0·3	7	43·0	196·2	249·9	270·0
10. Railways wagons ('000 no)[4]	2·9	11·9	11·1	13·6	17·8	15·4
11. Automobiles ('000 no)[5]	16·5	55	87·9	121·1	154·4	151·4
(i) Commercial vehicles ('000 no)[6]	8·6	28·4	41·2	71·7	91·1	86·0
(ii) Passenger cars, jeeps and land rovers ('000 no)	7·9	26·6	46·7	49·4	63·3	65·4
12. Power-driven pumps ('000 no)	35	109	259	431·0	373·0	364·0
13. Motor cycles and scooters ('000 no)	—	19·4	97·0	317·1	316·2	399·8
14. Diesel engines (stationary) ('000 no)	5·5	44·7	65·0	173·9	174·5	161·0
15. Bicycles ('000 no)	99	1,071	2,042	4,189	5,051	4,890
16. Sewing machines ('000 no)	33	303	235	335	343	309
IV. ELECTRICAL ENGINEERING INDUSTRIES						
17. Power transformers (lakh kva)	1·8	41·1	80·9	194·6	215·0	188·0
18. Electric motors ('000 HP)	[illegible]	728	2,721	4,060	45,290	4,700
19. Electric fans (lakh no)	2	10·6	17·2	41·8	38.3	41·0
20. Electric lamps (lakh no)	140	435	1,193	1,981	2,663	2,726
21. Radio receivers ('000 no)	54	282	1,794	1,734	1,739	1,439
22. Electric cables and wires Aluminium conductors ('000 tonnes)	1·7	23·6	64·2	86·0	70·3	52·4
V. CHEMICAL AND ALLIED INDUSTRIES						
23. Nitrogenous fertilizers ('000 tonnes of N)	9	98	830	2,164	3,144	3,434
24. Phosphatic fertilizers ('000 tonnes of P_2O_5)	9	52	229	842	949	980

25. Sulphuric Acid ('000 tonnes)	101	368	1,053	—	—	—
26. Soda Ash ('000 tonnes)	45	152	449	563	632	635
27. Caustic Soda ('000 tonnes)	12	101	371	578	614	577
28. Paper & Paper Board ('000 tonnes)	116	350	755	1,149	1,243	1,203
29. Rubber tyres						
(i) Auto tyres (lakh no)	8·7	14·4	37·9	79·7	87·1	86·9
(ii) Bicycle tyres (lakh no)	33	111·5	192·0	270·0	266·0	275·0
30. Cement (lakh tonnes)	27·3	79·7	143·0	186	209	232
31. Refractories ('000 tonnes)	237	567	683	—	—	—
32. Petroleum Products refined (lakh tonnes)	2	58	171	241	282	311
VI. TEXTILE INDUSTRIES						
33. Jute textiles ('000 tonnes)	837	1097	1060	1392	1334	1338
34. Cotton yarn (crore kg.)[7]	53·4	80·1	101·6	129·8	124·9	121·8
35. Cotton cloth (crore metre)[8]	421·5	637·8	777·2	963·8	951·8	924·6
(i) Mill sector (crore metre)	340·1	463·9	416·2	416·4	380·0	312·6
(ii) Decentralised sector (crore metre)	81·4	208·9	361·0	547·4	571·8	612·0
36. Rayon yarn ('000 tonnes)	2·1	43·8	100	126	127	—
37. Art silk fabric (crore metre)	28·7	54·4	94·7	—	—	—
38. Woollen manufactures						
(i) Woollen and worsted yarn (lakh kg.)[9]	87	100	197	—	—	—
(ii) Woollen and worsted fabrics (lakh metre)[10]	61	133	143	—	—	—
VII. FOOD INDUSTRIES						
39. Sugar (Oct.-Sept.) (lakh tonnes)	11·3	30·3	37·4	51·48	84·34	82.32
40. Tea (crore kg)	27·7	32·2	42·3	58·1	55·8	5·63
41. Coffee ('000 tonnes)	21	54·1	71·4	130·5	136·4	135·9
42. Vanaspati ('000 tonnes)	170	340	558	753	865	886
VIII. Electricity generated crore (Kwh)[11]	530	1690	5580	11080	12200	13010

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1. Excludes output in Goa upto 1969-70.
2. In terms of steel up to 1970-71.
3. In terms of finished steel up to 1970-71.
4. Excludes output in railway workshops.
5. Includes landrovers, jeeps, utilities, station wagons and vans.
6. Includes buses, trucks, tempos and three and four wheelers.
7. Includes mixed/blended and cent per cent non-cotton yarn from 1970-71.
8. Including blended/mixed from 1970-71 onwards.
9. Includes viscose yarn. staple fibre and acetate yarn.
10. Figures are for calender year from 1977.
11. Relates to public utilities only.

(P) Provisional

TABLE : 19·5

INDEX OF INDUSTRIAL PRODUCTION

(BASE : 1960=100) (BASE : 1970=100)[1]

1951	1961	1971	Industry Group	1980-81	1981-82	1982-83 (Provisional)	Percentage change in 1982-83 over 1981-82
54·8	109·2	186·1	General Index	154·0	167·3	173·8	+3·9
66·6	105·4	153·4	Mining and quarrying	151·3	175·2	194·1	+10·8
37·7	116·3	358·5	Electricity generated	202·9	223·6	239·5	+7·1
—	—	—	Manufacturing	148·8	159·9	163·9	+2·5
66·9	108·6	157·6	Food manufacturing	134·1	150·5	171·8	+14·2
58·0	107·0	182·5	Beverage industries	329·2	482·0	555·9	+15·3
—	—	—	Tobacco industries	127·2	144·2	150·0	+4·0
79·7	102·8	106·0	Textiles	115·7	113·0	104·8	—7·3
63·5	115·4	168·1	Footwear (leather)	72·4	84·9	77·8	— 8·4
43·5	95·5	224·1	Wood and cork	100·2	87·3	136·8	+56·7
38·5	105·8	225·7	Paper products	135·8	149·6	151·8	+1·5
72·4	100·9	55·3	Leather and fur products	97·9	93·7	80·8	—13·8
56·1	112·9	241·8	Rubber products	152·0	157·5	164·0	+4·1
42·4	113·4	252·7	Chemicals and chemical products	188·2	212·8	217·9	+2·4
11·0	106·0	316·0	Petroleum refinery products	140·5	164·2	181·0	+10·2
39·0	106·9	207·6	Non metallic mineral products	161·4	169·9	179·6	+5·7
46·5	118·7	208·6	Basic metal industries	187·5	148·1	161·5	+9·0
30·7	112·4	234·4	Metal Products	147·7	149·6	161·4	+7·9
22·2	121·2	373·2	Machinery except electrical machinery	221·8	239·0	238·7	—0·1
26·3	110·0	404·8	Electrical machinery	176·0	182·1	174·0	– 4·4
19·6	116·7	122·1	Transport equipment	130·7	145·2	142·5	– 1·9
N. A.	102·7	114·0	Miscellaneous manufacturing industries	109·0	92·3	89·5	– 3·0

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[1] Figures for recent years in the table have been computed on new base:1970=100. The general index of industrial production in 1970 as base 1960=100 stood at 184·3.

N. A.—Not available.

PRINCIPAL INDUSTRIES

COTTON TEXTILES

The origin of the cotton textile industry, the largest single industry in the country, dates back to 1818 when the first cotton mill was established at Fort Gloster near Calcutta. The grant of protection and the *swadeshi* movement enabled the industry to make rapid strides. The number of mills increased to 389 in 1937 with 2,02,464 looms. At the end of July 1983 there were 855 mills (575 spinning and 280 composite) with an installed capacity of 231.6 lakh spindles, the highest in the world and 2.1 lakh looms. In 1947, cotton yarn production was 59.7 crore kg and piecegoods production 350.9 crore metres. The production of cotton yarn in 1982-83 was 122 crore kg and that of cotton cloth 239.4 crore metre in the mill sector and 556 crore metre by the decentralised sector.

JUTE

The jute industry is one of the oldest in the country. As a major foreign exchange earner, it occupies an important place in the country's economy. The first power-driven jute mill was established at Rishra near Calcutta in 1859 and thereafter the industry made rapid progress. The partition of the country in 1947 deprived the industry of its vital raw material. Production of raw jute in 1947-48 was only 16.5 lakh bales as against the pre-partition output of 65.70 lakh bales. In 1961-62, production of raw jute reached a record level of 80 lakh bales. Production of jute goods during 1982-83 stood at 13.25 lakh tonnes. The value of exports of the jute goods during 1982-83 was Rs 201.83 crore. Of late, its share in the country's export trade has declined for various reasons. With about 44,376 looms installed in 69 jute mills (out of 72 jute mills 3 jute mills have since been closed down permanently) of which 6 are nationalised since 1980, the industry accounts for about 30 per cent of world's export of jute goods.

SUGAR

The sugar industry ranks second amongst the major agro-industries. The number of factories went up from 138 in 1950-51 to 321 in 1982-83. Production increased from 11.34 lakh tonnes in 1950-51 to 64.62 lakh tonnes in 1977-78 but, thereafter, there was a decline in production mainly due to shinkage in cane area. It came down to 58.44 lakh tonnes in 1978-79 and further declined to 38.59 lakh tonnes in 1979-80. Thereafter, the production again picked up as a result of various developmental measures taken to augment sugarcane output. Production of sugar consequently increased to 51.48 lakh tonnes in 1980-81 and reached a record level of 84.38 lakh tonnes in 1981-82. In 1982-83 there was a near record production of 82.32 lakh tonnes. Sugar exports during 1982-83 were 4.22 lakh tonnes as against 3.33 lakh tonnes in 1981-82. A notable feature of the development of the sugar industry after Independence was its remarkable expansion in the co-operative sector. Out of 321 factories that worked in 1982-83, 156 were in the co-operative sector which accounted for about 55 per cent of the total sugar production in the country.

After a brief period of complete decontrol of sugar from 16 August 1978 to 16 December 1979, Government re-introduced the policy of partial control of sugar with a dual pricing system from 17 December 1979. Under this policy, 65 per cent of the total production of the factories was procured by Government as levy at controlled prices and the balance 35 per cent was allowed to be sold in the open market without any price control. This policy was continued in 1982-83 also.

The progress of the sugar industry since 1950-51 is shown in table 19.6.

TABLE 19·6
GROWTH OF SUGAR INDUSTRY

	1950-51	1960-61	1970-71	1980-81	1981-82	1982-83
Number of Mills .	138	174	215	315	320	321
Production ('000 tonnes) .	1,134	3,021	3,740	5,148	8,438	8,232

Up to 1966-67, the sugar year was November-October; thereafter it has been October September.

CEMENT

Manufacture of cement was first started in Madras in 1904. At present, there are 89 cement factories (20 in the public sector) with a total installed capacity of about 3.69 crore tonnes per annum. Total production of cement (all varieties) in 1983-84 was about 2.7 crore tonnes which is an all time record. Production of cement was mere 29 lakh tonnes in 1950-51.

To rationalise the price and distribution of cement, Government had decided in favour of partial de-control of cement with effect from 28 February 1982. Under the scheme, all existing cement units are required to give up to 66.6 per cent of their installed capacity as levy cement at controlled price. The new units which start commercial production after January 1982 and units which are designated as sick units for the purpose are required to give 50 per cent of their installed capacity as levy cement. The levy cement would meet the requirement of the Central and State governments, corporations, large, medium and small scale industries for construction of factories and to small consumers constructing dwelling units having plinth area upto the prescribed limits and requiring small quantities for repairs of residential houses. State government have been advised to provide adequate quantity of cement for meeting the requirements of socially oriented schemes.

Government had decided for one single ex-factory retention price for all cement factories except to the extent that there would be separate retention price for Ordinary Portland Cement (OPC), Portland Pozzolana Cement (PPC) and Portland Slag Cement (PSC). In respect of OPC/PSC the retention price would be Rs 335 per tonne and of PPC Rs 320 per tonne. With effect from 1 October 1982, the use of cent per cent new gunny bags of improved weaving pattern has been made compulsory for packing cement by all the cement units.

With the announcement of the policy all existing subsidies except those relating to clinker movement and units located in remote areas are discontinued. All mini cement plants except those set up by MRTP Houses, (Composite plant including clinkering and grinding operation upto a capacity of 66,000 tonnes per annum) are free from price and distribution control.

The Cement Corporation of India Ltd. is the only public sector undertaking in the Central sector for the manufacture of cement. It has nine factories spread over six states—one each in Karnataka, Himachal Pradesh, Assam and Haryana; two in Andhra Pradesh and three in Madhya Pradesh.

PAPER AND PAPER BOARD

The paper industry encompassing pulp, paper and paper board and newsprint is one of the industries of basic importance to the country. In 1950-51, when the country embarked on its planned programme of development the capacity for paper and paper board was 1,36,600 tonnes installed in seventh manufacturing mills. The industry has made rapid progress since then and as on 1 January 1984 there were 222 units with a total annual installed capacity of 21.65 lakh tonnes. The production during 1983 was 11.78 lakh tonnes as against 1.09 lakh tonnes in 1951.

The Hindustan Paper Corporation Ltd. (HPC), Calcutta a public sector undertaking, was set up in 1970 to establish pulp and paper projects in the country. The Corporation has established a pulp and paper project in Nagaland with a capacity of 33,000 tonnes per annum. The project was commissioned for commercial-production during 1982. The Corporation has also commissioned a newsprint project in Kerala with an installed capacity of 80,000 tonnes per annum during 1982.

Newsprint

The National Newsprint and Paper Mills Ltd., Nepanagar, Madhya Pradesh was till recently the only unit in the country manufacturing newsprint. The mill, which is now in the public sector, started production in 1955. Against installed capacity of 67,500 tonnes per annum, the mill has produced 58,637 tonnes of newsprint during 1983-84. The newsprint project of Mysore Paper Mills in Karnataka (a state government undertaking) with a capacity of 75,000 tonnes per annum and the Kerala Newsprint Project (now Hindustan News print Ltd.) of the Hindustan Paper Corporation, a public sector project with a capacity of 80,000 tonnes per annum went into production during 1981 and 1982 respectively. The Mysore Paper Mills has produced 45,908 tonnes and the Hindustan Newsprint Ltd. 54,897 tonnes during 1983—increasing the domestic production of newsprint from 55,021 tonnes in 1981-82 to 1,59,442 tonnes during 1983.

Photo paper and films

The Hindustan Photo Films Manufacturing Co. Ltd., was set up at Udagamandalam in 1960 by the Government for manufacturing cine, x-ray, roll and graphic art films and photo paper. The Company has a total installed capacity (for integrated production as well as jumbo conversion) of 153.24 lakh sq metre. During 1982-83 it obtained a production of 113.32 lakh sq metre of various kinds of photo sensitised material valued at Rs 82.06 crore.

IRON STEEL

The beginning of iron and steel industry in India was in 1870 when the Bengal Iron Works Company (a forerunner to IISCO) set up its plant at Kulti in West Bengal. But the first efforts at large scale production got under way when Tata Iron & Steel Company (TISCO) was set up at Jamshedpur in 1907. This was followed by the establishment of the Indian Iron and Steel Company (IISCO) at Burnpur in 1919. The first unit in the public sector, now known as the Visvesvaraya Iron & Steel Works Ltd., started functioning at Bhadravati in 1923.

After Independence, the development of the steel industry was considered during the First Plan but it was only in the Second Plan that work started to set up three integrated steel projects each with 10 lakh ingot tonnes capacity at Bhilai, Durgapur and Rourkela. An expansion programme to double the capacity of the two private sector steel plants namely, TISCO and IISCO to 20 lakh tonnes and 10 lakh tonnes respectively was also taken in hand. The three plants in the public sector came into operation in stages between 1956 and 1962 and the expansion of the private sector factories was completed in 1959. In the Third Plan, the emphasis was on expansion of the three public sector steel plants and the setting up of new steel works at Bokaro. The Fourth Plan steel programme was based on the maximum utilisation of existing steel capacity and preparation of plans to set up three new steel plants at Salem in Tamil Nadu, Vijayanagar in Karnataka and Visakhapatnam in Andhra Pradesh to create additional steel capacity to meet the requirement in the Fifth Plan.

However, it was only by the close of the Fifth Plan which terminated a year ahead of the schedule on 31 March 1978 that there was addition to steel making capacity of the order of 17 lakh tonnes with the commissioning of the Bokaro Steel Plant on 26 February 1978. The total installed ingot steel capacity which stood at 89 lakh tonnes as on 31 March 1974 had increased to 116 lakh tonnes by 31 March 1980.

The management of IISCO was taken over by the Government on 14 July 1972 and the ownership of the company acquired on 17 July 1976 with a view to improve its working. A scheme has already been drawn to modernise the Burnpur works during the Seventh Plan period.

There are at present six integrated steel plants in the country, five in the public sector and one in the private sector. The capacity of these plants has been shown in the table 19.7.

TABLE 19.7
CAPACITY OF STEEL PLANTS

('000 tonnes)

Plant	Rated Capacity	
	Ingot Steel	Saleable Steel
Public Sector		
Bhilai	2,500	1,965
Durgapur	1,600	1,239
Rourkela	1,800	1,225
Bokaro	2,500	1,971
IISCO	1,000	800
Private Sector		
TISCO	2,160	1,740
Total	11,560	8,940

Bokaro and Bhilai Steel Plants are presently under expansion to annual capacity of 40 lakh ingot tonnes each. In Bokaro Steel Plant all the units except the Cold Rolling Mill Complex are likely to be commissioned by July 1984. The Cold Rolling Mill is likely to be commissioned in September 1986. In Bhilai Steel Plant the expansion has been planned in two phases. All the units in Phase-I are likely to be commissioned by December 1984 except the third and fourth Slab Casters which are likely to be commissioned in March and June 1985, respectively. Units in Phase-II comprising Blast Furnace No. 7 and Coke Oven Battery No. 9 are expected to be completed by June 1986.

Alloy Steel Plant, Durgapur is the first public sector steel plant set up by the Government to produce special and alloy steel. The project has already been expanded from 1,00,000 tonnes of ingots per annum capacity to 1,60,000 tonnes. An expansion scheme involving installation of a vacuum degassing unit, vacuum oxygen decarburising unit and a continuous slab-cum-bloom caster, to augment the capacity of this steel plant to 2,00,000 tonnes of liquid steel per annum is under implementation. These facilities would enable this steel plant to produce more refined quality of alloy steels.

From a small pig iron plant of 24,500 tonnes per annum capacity in 1923, the Visvesvaraya Iron & Steel Ltd has developed into a major producer of special and alloy steel with 77,000 tonnes capacity per annum. In order to optimise production, a continuous casting machine with related facilities has been commissioned. In addition, vacuum degassing and vacuum oxygen decarburisation unit have been installed for making of sophisticated grades of steels such as high speed steels and die blocks.

To augment supply of power to the steel plants at Durgapur and Rourkela, Government have sanctioned installation of 2x60 mw captive power plants each at Durgapur and Rourkela. The work on this is in progress.

Mini Steel Plants

The electric arc furnace units, popularly known as mini steel plants, produce steel based on steel scrap/sponge iron. These units constitute an important segment of the steel industry in the country. While the integrated steel plants mainly produce mild steel in bulk quantities, the mini steel plants produce mild steel as well as alloy steel which could not be economically produced by the integrated steel plants.

At present there are 173 mini steel plants with a total licenced capacity of over 46 lakh tonnes per annum of which 149 units have been in production. The other units are at various stages of implementation. Besides these units, there are some electric arc furnace units licences for manufacture of castings which have been allowed to diversify their production into steel ingots.

The production from mini steel plants has been steadily increasing and during 1982-83, it reached a record of over 20.5 lakh tonnes of steel ingots.

Sponge Iron

Sponge iron is mainly used as a substitute raw material for steel scrap in mini steel plants.

In view of the importance of utilizing large non-coking coal reserves for steel making and for conserving coking coal resources, a special project was taken up at Kothagudam in Andhra Pradesh with UNDP assistance for production of sponge iron. The plant has established production of sponge iron with indigeneous iron ore and non-coking coal. The capacity of the plant is being expanded from 30,000 tonnes per annum to 60,000 tonnes per annum. This expansion scheme is expected to be completed by December 1984.

Salem Steel Plant

The Salem Steel Plant has capacity to produce 32,000 tonnes of stainless steel sheets/coils. It started commercial production in March 1982. This plant is capable of producing sophisticated grades of stainless steel sheets/coils for use in industrial sector.

Visakhapatnam Steel Project

Visakhapatnam Steel Project (VSP) is the first integrated steel project being set up at a coastal location near Visakhapatnam.

Most modern technology of coke and iron and steel production will be provided in the VSP. For the first time 7 metre tall coke oven batteries with dry quenching facilities and bigger blast furnaces of 3,200 cu m each, with bell-less charging and cent per cent continuous casting facilities, will be set up in India.

This is a 34 lakh tonnes liquid steel per annum capacity plant to be completed in two over-lapping stages—the first stage being for 12 lakh tonnes per annum capacity and the second comprising the balance. The construction is in progress.

The cost of the project as approved by the Government is Rs 3,897.28 crore, based on 1981 prices, with a foreign exchange component of Rs 679.59 crore.

New Plants

Government has announced that a steel plant will be erected at Vijayanagar in Karnataka and another at Daitari (120 km inland) in Orissa. This decision stands unaltered. Steel Plants at Vijayanagar and Daitari will be the next steel plants that will be erected in the country.

A number of studies have established that in the circumstances prevailing in the country a steel plant based on the blast furnace route will be exceedingly expensive and will lead to heavy losses. So a number of alternative processes are being studied to determine the most suitable and cost effective technology and product mix for the proposed steel plants. It is anticipated that an economically viable scheme for implementing these two steel plants will be evolved very soon.

Metallurgical and Engineering Consultants

The Metallurgical & Engineering Consultants (India) Ltd. (MECON) earlier known as Central Engineering and Design Bureau was formed in 1959 as a unit of the then Hindustan Steel Ltd. to provide consultancy and engineering services in the field of iron and steel. In 1973, MECON was incorporated as an independent company and became a subsidiary of SAIL. With the restructuring of public sector iron and steel industry in 1978, MECON was delinked from SAIL and was made an autonomous company directly under the Ministry of Steel and Mines. Today MECON is one of the leading design engineering and consultancy organisations in India having nearly 2,400 qualified engineers and other supporting technical staff.

MECON is an equally major force to reckon with in the non-ferrous industries, ferro-alloy plants, sponge iron and pellets plant, power plants, coal and chemicals, and host of other high technology areas. Outside India, MECON is now deeply involved in the development of iron and steel industry in almost a dozen countries in Africa, West Asia and the Far East.

MECON has gone in a major way to expand their activities beyond the normal consultancy, design and engineering work. They have entered into high technology areas for designing equipment and their systems. MECON has developed its own design of coke oven batteries which are working in existing steel plants at Durgapur and Rourkela. To further strengthen this technology base, MECON has obtained under licence latest technology for 7 metre tall coke oven batteries and dry coke cooling plants. This new technology being introduced for the first time in the country at Visakhapatnam Steel Project, has the advantage of recovering the lost energy and better pollution control.

MECON has made a significant impact on the country's industrial scene in the area of detail design, manufacturing supply, erection and commissioning of equipment and system for various types of rolling mills which constitute about 30 to 45 per cent of investment in an integrated steel plant. Thus, MECON has not only developed large scale expertise for the equipment and system design under foreign know-how licence agreements, it has been instrumental in the growth and development of indigenous equipment manufacturing industries as well.

Steel Authority of India

The Steel Authority of India Ltd. (SAIL) is a wholly owned Government undertaking and along with its wholly owned subsidiary, the Indian Iron & Steel Company Ltd., owns and operates all the integrated steel plants at Bhilai, Bokaro, Burnpur, Durgapur and Rourkela in the public sector in the country, besides alloy and special steel plants at Durgapur and Salem. The authorised capital of the Company is Rs 4,000 crore and the paid up capital as on 31 March 1984 was Rs 3,439.56 crore. The gross turnover of the Company during 1983-84 was Rs 3,108 crore. This included sales of imported iron and steel amounting to Rs 297.42 crore. The production of ingot steel, saleable steel, pig iron for sale from the steel plants under SAIL and TISCO during 1981-82, 1982-83 and 1983-84 is shown in table 19.8.

TABLE 19.8
PRODUCTION OF IRON AND STEEL

('000 tonnes)

Plants	Ingot Steeel			Saleable Steel			Saleable Pig Iron		
	1981-82	1982-83	1983-84	1981-82	1982-83	1983-84	1981-82	1982-83	1983-84
Bhilai	2,115	2,130	1,837	1,819	1,838	1,574	504	457	544
Durgapur	930	952	806	782	812	602	88	105	159
Rourkela	1,203	1,144	1,088	1,091	992	1,862	66	29	47
Bokaro	1,792	1,829	1,681	1,472	1,529	1,288	452	393	527
IISCO	600	624	543	488	500	444	59	119	130
TISCO	1,956	1,946	1,973	1,606	1,620	1,626	—	—	—
Special Steel									
ASP	86·01	81·1	66·46	52·04	46·8	43·66	—	—	—
SSP	—	—	—	3·21	6·8	6·93	—	—	—

ENGINEERING INDUSTRY

The Indian engineering industry is now in a position to meet the bulk of the requirement of capital goods for various sectors of the economy. The industry, over a period of three decades, has turned a situation of near total dependence on imports to a position of self-reliance and the engineering goods are now being increasingly exported. Thus, where as during the Fourth Plan, almost 75 per cent of the power generating capacity installed in the country was based on imported equipment, the trend was reversed during Fifth Plan, when indigenous contribution amounted to 85 per cent. Similar has been the experience in steel and other sectors of the economy.

With the growth of engineering industries during the last three decades of planned development, enlargement of production capabilities, attainment of technical competence, sophistication and product diversification, India's engineering exports have emerged as one of the most important sectors in India's export profile. From a beginning of Rs 5 crore in 1956-57, engineering exports have reached more than Rs 900 crore in 1980-81 which improved further to Rs 1,060 crore in 1981-82 and to Rs 1,250 crore in 1982-83. Share of export of capital goods and turnkey projects has increased from 12 per cent in 1956-57 to 38 per cent in 1981-82 and to more than 42 per cent in 1982-83; this is expected to go upto 50 per cent by the end of this decade.

Heavy Engineering

Heavy Mechanical Industrial Machinery

A number of units in the public and private sectors are manufacturing steel plant equipment, mining equipment, process equipment for fertiliser, chemical, petro-chemical and petroleum industries, transport equipment including wagons for railways and other mechanical equipment. In the public sector, Heavy Engineering Corporation, Ranchi incorporated in 1958, is engaged in the production of steel plant equipment. It has three plants—Heavy Machine Building Plant, Foundry Forge Plant and Heavy Machine Tool Plant. Production from these three plants totalled Rs 166 crore during 1983-84 as against Rs 133 crore in 1982-83.

Mining and Allied Machinery Corporation, Durgapur produced equipment worth Rs 56 crore during 1983-84.

Bharat Heavy Plates & Vessels Ltd. (BHPV) another unit in the public sector incorporated in 1966 which is engaged in manufacture of equipment such as heat exchangers, pressure vessels, spheres, storage tanks, multilayer vessels, tonnage oxygen plants, small oxygen plants, continuous digesters, evaporation plants, industrial boilers, cryo-containers, titanium anodes, dearatores, etc., achieved a production of Rs 54 crore during 1983-84.

Bharat Pumps and Compressors Ltd., Allahabad, is meeting indigenous needs of reciprocating and centrifugal pumps and compressors for various industries. Richardson & Cruddas Ltd., Triveni Structurals Ltd., Tungabhadra Steel Products Ltd., Braithwaite & Co., Jessop & Co., are the heavy industry public sector units engaged in design and fabrication of steel structurals for civil construction and electricity transmission towers.

There are four units in the public sector producing wagons for railways. These are Burn Standard Co Ltd., Braithwaite & Co., Jessop & Co. and Bharat Wagon & Engineering Co. Ltd. Besides wagons Burn Standard Co. Ltd. is also producing refractories at its various plants in West Bengal, Madhya Pradesh, Bihar and Tamil Nadu. Jessop & Co. are producing cranes, structurals and paper making machinery at their Calcutta works.

Transport Equipment and Tractors

In the transport sector, production of commercial vehicles during 1983 was 85,645 production of cars 43,718, Jeeps 22,974 and railway wagons about 14,900. Production of agricultural tractors was about 73,000 during 1983.

Maruti Udyog Ltd., which has entered into financial and technical collaboration with Suzuki Motor Co. of Japan, delivered the first car from its works in December 1983. Their total production during 1983-84 was 844 passenger cars.

Machine Tools

The production of machine tools has increased from Rs 6 crore in 1960 to Rs 234 crore in 1981 in the organised sector, both in public and private. Production of machine tools during 1983 was Rs 270 crore. Exports constitute about 15 per cent of the total production of machine tools in the country

HMT Ltd is a major manufacturer of machine tools. The total production of machine tools from the various plants of HMT during 1983-84 was Rs 123 crore.

The Central Machine Tool Institute, Bangalore, a grantee institution of the Government is a premier research and development organisation in the country providing technical assistance to the machine tool industry and engineering industry by way of development of new designs, evaluation of prototypes, research and testing of machine tools, etc.

Heavy Electrical Industries

The electrical power equipment industry in India is well equipped to cover almost the entire domestic requirements. The Bharat Heavy Electricals Ltd. (BHEL), a public sector undertaking, is the major producer of power generation equipment in the country. It has its manufacturing plants at Bhopal, Tiruchy, Hyderabad, Hardwar, Panipat, Bangalore and Jagdishpur. Their total production was valued at Rs 1,302 crore during 1983-84 which was 10 per cent higher than the production of Rs 1,179 crore achieved in 1982-83.

FERTILIZERS

Three decades of planning and development of fertilizer industry has brought India to the front line of fertilizer producing countries. Fertilizers, being a key input for agricultural development, occupies a prestigious place in country's developmental strategy. There are 36 large fertilizer units producing a wide range of straight nitrogenous, complex and phosphatic fertilizers. Besides, there are about 40 small units producing single superphosphate and six units producing ammonium sulphate as by-product from steel plants. At present, 10 fertilizer projects including expansion of some of the existing plants are under various stages of implementation.

The nitrogen production capacity has increased from modest 85,000 tonnes in 1951-52 to 51.7 lakh tonnes in 1983-84. The phosphatic fertilizer production capacity has also increased from 63,000 tonnes in 1951-52 to 14.18 lakh tonnes in 1983-84. Against the nominal production of 16,000 tonnes of nitrogen and 11,000 tonnes of P_2O_5 in 1951-52, fertilizer production is estimated at 35 lakh tonnes of nitrogen and 10.3 lakh tonnes of P_2O_5 in 1983-84.

The total production capacity of the plants now in operation and those under construction would be 72 lakh tonnes of nitrogen and 23.9 lakh tonnes of P_2O_5 by 1986-87. Actual production from this capacity would, however, not be adequate to meet the expected increased demand of fertilizers by the end of the Seventh Plan which is placed at 85 lakh tonnes of nitrogen and 35 lakh tonnes of P_2O_5.

An ambitious programme for setting up additional fertilizer capacity has, therefore, been taken on hand. Work is scheduled to start on six large sized gas-based nitrogenous fertilizer plants, in a phased manner between 1983-84 and 1986-87. One of these plants will be located in Guna district of Madhya Pradesh, in Sawai Madhopur district of Rajasthan and four in Uttar Pradesh—one each in Sultanpur, Bareilly, Badaun and Shahjahanpur districts.

The endeavour of the Government is to provide fertilizer to the farmers at a reasonable price in order to increase the consumption of fertilizers and thereby the agricultural production. Government have, therefore, reduced the price of fertilizers by about 7.5 per cent with effect from 29 June 1983. The retention price scheme introduced for the manufacturers of nitrogenous fertilizers in November 1977 and for phosphatic fertilizers in February 1979 continues to be in force. Government is also giving freight subsidy which covers movement of fertilizers right up to the block headquarters in order to make available adequate fertilizers to the farmers in time.

The public sector consultancy organisations have made considerable progress in the acquisition/development of indigenous know-how for the chemical and fertilizer industry. These are : Projects and Development (India) Ltd. (PDIL), FACT Engineering and Design Organisation (FEDO) and Engineers India Ltd. (EIL). They have acquired capabilities for preparation of detailed feasibility studies, detailed engineering, procurement, erection and commissioning of plants.

Over the years, the country has developed a wide and diversified industrial base geared especially to meet the specialised requirements of the fertilizer industry, e.g., high pressure vessels, compressors, pumps, heat exchanger, etc.

Public Sector Undertakings

Public sector plays a dominant role in the fertilizer industry. The first state owned fertilizer factory went into production in 1951 at Sindri in Bihar. The second plant was set up at Nangal in Punjab, for which the Nangal Fertilizers and Chemicals Ltd. was incorporated in February 1956. With the coming up of another fertilizer plant at Trombay, the Government decided to bring all the public sector fertilizer units under the management of a single undertaking. With this end in view, the Fertilizer Corporation of India Ltd. (FCI) was incorporated in January 1961. The National Fertilizer Ltd. was incorporated on 23 August 1974 with an authorised capital of Rs 150 crore for the establishment of fertilizer plants in the north western region. Thereafter, the Fertilizer Corporation of India and the National Fertilizer Ltd. were re-organised into four companies on the basis of feed-stock and geographical considerations with effect from 1 April 1978.

FCI has now four operating units, one each at Sindri, Gorakhpur, Talcher (Orissa) and Ramagundam (Andhra Pradesh) with a total capacity of 8.06 lakh tonnes of nitrogen and 1.50 lakh tonnes of P_2O_5. Besides, it has an organisation engaged in the mining of gypsum in Rajasthan known as the Jodhpur Mining Organisation.

National Fertilizer Ltd. (NFL) has at present four operating units, viz., the calcium ammonium nitrate plant at Nangal and the urea plants at Nangal, Bhatinda and Panipat.

The Fertilizer and Chemical Travancore Ltd. (FACT), Udyogamandal (Kerala) has at present three operating units one at Udyogamandal and two at Cochin. Besides fertilizer the Company is also engaged in the manufacture of chemicals.

Rashtriya Chemicals and Fertilizers Ltd. took over the Trombay plants. Apart from fertilizers, the plants produce a wide range of industrial products. The Company is currently implementing a large sized gas based nitrogenous fertilizer project at Thal in Maharashtra.

Hindustan Fertilizer Corporation Ltd. has three units in production and two projects under construction. The operating units are at Namrup in Assam, Durgapur in West Bengal and Barauni in Bihar.

Madras Fertilizers Ltd. is a joint venture of the Government holding 51 per cent of the equity share capital, the remaining 49 per cent being shared equally between Amoco, Inc. of USA and the National Iranian Oil Company.

Pyrites, Phosphates and Chemicals Ltd., which was set up in March 1960 to export the pyrites deposits in the country, assumed independent status in September 1963. It is presently engaged in the exploitation of pyrites deposit at Amjhore in Bihar, in exploratory-cum-production mining of pyrites deposit at Saladipura in Rajasthan and in mining of rock phosphate ore from the Mussorie phosphorite deposits. The pyrites are used as a substitute for sulphur in the manufacture of sulphuric acid and also as soil amendment material. The rock-phosphate mined is powered and supplied for direct application as a source of P_2O_5 in acidic soils.

The Projects & Development India Ltd. (PDIL), formerly known as the Fertilizer (Planning & Development) India Ltd., is engaged in the field of design engineering, technical procurement and supervision of construction/commissioning of fertilizer and allied chemical plants. The Company has played pioneering role in developing entirely on its own initiative the know-how for manufacturing of catalysts in India.

Paradeep Phosphates Ltd. (PPL) incorporated on 24 December 1981 with its registered Office at Bhubaneswar, is engaged in setting up a phosphatic fertilizer project at Paradeep in Orissa with a capital of Rs 183.64 crore. The Government has entered into a financial participation agreement with Nauru, which will have 40 per cent equity share in the authorised capital of this Company.

CHEMICALS

Chemical industry plays a pivotal role in the Indian economy. It ranks fourth next only to iron and steel, engineering and textile industries.

During the last few years chemicals industry—both organic and inorganic—has registered rapid growth. The chemical industry gives a distinctive shape to country's economy. Heavy organic and inorganic chemicals provide the basic building blocks for the manufacture of several downstream products like drugs, dyestuffs, pesticides, plastics, paints, perfumery compounds, etc.

The development of organic chemical industry in India is rather recent-started in the early 1950s, based on ethyl alcohol, manufactured from fermentation and distillation of sugarcane molasses and benezene available as a coke-oven by-product. At present, a substantial part of the industry is based on feedstocks derived from petroleum. Basic organic chemicals like phenol, methanol, formaldehyde, acetone and acetic acid are manufactured in the country in substantial quantities.

The major inorganic chemicals like soda ash, caustic soda, carbon black, calcium carbide, red phosphorous and potassium chloride are all manufactured in the country and a position of near-self-sufficiency has been achieved in all these chemicals.

Hindustan Organic Chemicals Ltd., set up at Rasayani in Maharashtra, was incorporated in December 1960. The company is presently manufacturing 13 chemical groups required for drug and pharmaceuticals, pesticides, dyestuffs, rubber chemicals, etc. Its acetic anydride plant was commissioned in February 1983.

The alcohol production industry was started in 1940 mainly to utilize molasses produced from sugar factories. With the growth of alcohol-based chemical industry in the 50s and 60s, production of alcohol has assumed importance in its own right. The oil crisis has revived, the world over interest in the use of renewable feed-stocks like alcohol. Well before this revival, a large alcohol-based chemical industry had come up in our country. It is mainly in India that a wide range of organic chemical products are manufactured on a commercial scale with alcohol as the feed stock.

Pesticides

Pesticides industry has assumed a vital role both for agricultural and health programmes. It has made a steady progress during the last three decades. The basic manufacture of pesticides commenced in India in 1952 with the setting up of the plant at Rishra (Calcutta) for the manufacture of Benzene Hexachloride (BHC) which was followed by DDT plant in 1954 in Delhi. Today, 50 technical grade pesticides are being produced in the country with an installed capacity of 95,090 tonnes. Fifty units are engaged in the manufacture of technical grade pesticides and over 500 units are making pesticidal formulations.

Hindustan Insecticides Ltd. which was incorporated in March 1954, has at present three units at Delhi, Udyogamandal (Kerala) and Rasayani (Maharashtra). The company is engaged in the manufacture of DDT, BHC and Malathion, three major pesticides used in the country. They supply major portion of their formulations to National Malaria Eradication Programme.

DRUGS AND PHARMACEUTICALS

The drugs and pharmaceutical industry in India has achieved a phenomenal growth since Independence, both in the public and private sectors and is now well-organised. It was mainly dependant on imported chemicals in 1950s and the production was confined only to galenicals produced from the medicinal plants and herbs. The formulations were produced only from imported bulk drugs and intermediates. The drug industry has now achieved an impressive growth during the three decades of planning and development. The modest bulk drug production value of Rs 60 crore in 1960-61 has increased to Rs 325 crore and production of formulations was of the order of Rs 1,600 crore in 1982-83. These are estimated to rise to Rs 345 crore and Rs 1,660 crore respectively in 1983-84. Though the value of imports has increased from Rs 10.5 crore in 1960-61 to Rs 148.48 crore in 1982-83, yet as percentages of total production value it has declined from 9.53 per cent in 1981-82 to 7.5 per cent in 1982-83, which manifests near self-sufficiency in the requirements of finished products.

In addition, the export of drugs and pharmaceuticals has also registered steady increase, achieving the level of Rs 111.06 crore in

1982-83 as compared to the exports of a value of only Rs 42.18 crore in 1975-76.

Most of the drugs cover a wide range of antibiotics e.g. Penicillin, Streptomycin, Tetracycline, Chloramphenicol, Erythromycin, Semi-Synthetic Pencillins, etc., Sulpha-drugs, including long acting ones e.g. Sulphasomidine, Dulphamoxole, Sulphadimidine, Phthalyl Sulphathazole etc., Vitamins e.g. A, B, B_1, B_{12} C, D, E, P, K and Folic Acid etc. are now being manufactured within the country. Efforts are being made to step up the production of Ampicillin and Chloroquin Phosphate as their production is not sufficient to meet the demand. Production of Vitamin B_6 has been undertaken for the first time in the country.

There were 31 drug companies with direct foreign equity exceeding 40 per cent when the New Drug Policy was announced in 1978. Considerable progress has been achieved in the matter of dilution of foreign equity since then. Nineteen cases of dilution have taken place; 12 of these have been to levels upto or below 40 per cent. One foreign company has merged with an Indian company. Of the remaining 18 FERA companies, 4 have volunteered to dilute to 40 per cent and 4 are under direction to do so.

After the commencement of the Drugs (Prices Control) Order, 1979 the prices of about 9,000 formulation packs including about 700 leader packs in Category I, II and III have been either fixed or revised upto the end of February 1984.

The growth in the pharmaceutical industry has put India ahead of any other country in the third world. The Indian industry has now reached a stage of operation comparable to international standards in production technology and the quality of products. A wide range of curative and preventive medicines and vaccines made available by the industry has played a major role in the improvement of health standards in the country since 1947, specially in the control of communicable diseases, such as cholera, plague, small-pox, tuberculosis, besides malaria.

Public Sector Undertakings

A National Drugs & Pharmaceuticals Development Council has been set up under the provisions of I (D&R) Act, 1951. In the development of the drug industry, the public sector has played a significant role. The first public sector company, the Hindustan Antibiotics Ltd. was set up in 1954 at Pimpri near Pune for the production of Penicillin. The Company is now producing several antibiotics. It has three subsidiaries established in collaboration with Maharashtra, Karnataka and Goa Governments and their financial institutions.

The Indian Drugs & Pharmaceuticals Ltd. (IDPL), was incorporated as a company under the Companies Act, 1956 on 5 April 1961. It has five plants—one each located at Rishikesh for the manufacture of antibiotics, at Hyderabad for the manufacture of synthetic drugs, at Madras for surgical instruments and formulations, at Gurgaon for formulations and at Muzaffarpur for drugs and chemicals intermediates.

IDPL produced bulk drugs, formulations, surgical instruments and fine chemicals of the value of Rs 118.07 crore during 1982-83 as compared to Rs 105.16 crore during 1981-82. Sales amounted to

Rs 195.45 crore as compared to Rs 98.54 crore in 1981-82 registering a growth of 7 per cent.

IDPL has also four subsidiaries set up in association with State Industrial Development Corporations in Punjab, Rajasthan, Uttar Pradesh and Orissa. These are : Punjab Maize Products ITD, Sangrur set up by PSIDC for manufacture of dextrose, starch, glucose, etc., Rajasthan Drugs & Pharmaceuticals Ltd., Jaipur; U.P. Drugs and Pharmaceutical Co. Ltd., Lucknow and Orissa, Drugs & Chemicals Ltd., Bhubaneswar.

The Government have nationalised Smith Stanistreet & Company Ltd., Calcutta from 1 October 1977 and Bengal Chemicals & Pharmaceutical Works Ltd., Calcutta from 15 December 1980. The Bengal Immunity Company Ltd., Calcutta was also taken over by Government on 18 May 1978 and a Board of Management was appointed for the management of the Company. The period of take-over has been extended upto 17 May 1984.

PETRO-CHEMICALS

The important role of petro-chemicals industry in India's national economy can be judged from the wide range of chemicals that can be produced and the vast field of their application. Petro-chemicals are manufactured from petroleum feedstocks like natural gas and naphtha and can also be derived from alcohol and calcium carbide. The industry is comparatively of recent origin in this country. A beginning was made in India with the establishment of small naphtha cracker unit in Bombay in private sector in 1967. A large petrochemicals complex was set up in the Central public sector by Indian Petrochemicals Corporation Ltd. in Vadodara and was commissioned in the years 1974 to 1978. This complex, is in full production and its turnover during 1983-84 was about Rs 468 crore and gross profit will be about Rs 84 crore. IPCL is now implementing the expansion programme of some of its plants. Another major petrochemical complex is under implementation at Bongaigaon, Assam. The Bongaigaon Refinery and Petrochemicals Ltd. was registered in 1974 as a wholly owned Government undertaking. Its refinery portion was commissioned between 1979 and 1981; the petrochemicals portion is under implemention.

MINING AND MINERALS

MINERAL RESOURCES

India is richly endowed with minerals. The important occurrences of the principal minerals found in the country alongwith their estimated reserves are :

Bauxite

Important deposits occur in Andhra Pradesh, Bihar, Goa, Gujarat, Jammu and Kashmir, Karnataka, Kerala, Madhya Pradesh, Maharashtra, Orissa, Rajasthan, Tamil Nadu and Uttar Pradesh. The reserves of bauxite of all grades have been estimated at 248.91 crore tonnes.

Barytes

India possesses the largest reserves of barytes in the world which are placed at 7.30 crore tonnes. Most of the reserves are located at Mangampet taluk in Cuddapah district, Andhra Pradesh. Other minor occurrences are reported from Rajasthan, Tamil Nadu, Himachal Pradesh, West Bengal and Maharashtra.

Coal and Lignite

Vast deposits of coal of Gondwana formations occur in Andhra Pradesh, Bihar, Madhya Pradesh, Maharashtra, Orissa and West Bengal and of the tertiary formations in Arunachal Pradesh, Assam, Meghalaya, Jammu and Kashmir and Nagaland. The overall reserves of coal, both coking and non-coking, have been estimated at 8,643 crore tonnes. Of these, the reserves of coking coal in the Gondawana coalfields alone are about 1,875 crore tonnes. Significant reserves of lignite occur in Gujarat, Jammu and Kashmir, Rajasthan and Tamil Nadu. The total estimated reserves were 210 crore tonnes of which Neyveli field in Tamil Nadu alone contains 192 crore tonnes.

Chromite

Deposits of economic significance occur in Andhra Pradesh, Bihar, Karnataka, Maharashtra, Manipur, Orissa and Tamil Nadu. The total reserves of *in situ* chromite including lump and fine are about 11.12 crore tonnes.

Copper Ore

Important copper ore bearing areas are Guntur and Khammam districts of Andhra Pradesh, Singhbhum district of Bihar, Banaskantha district of Gujarat, Chitradurga, Chikmagalur, Hassan and Raichur districts of Karnataka, Balaghat district of Madhya Pradesh, Alwar, Bhilwara, Jhunjhunu and Sirohi districts of Rajasthan and Sikkim. The aggregate reserves have been estimated at about 45.52 crore tonnes with a metal content of 56.62 lakh tonnes.

Diamond

The Panna diamond belt is the only diamond producing area in the country. The diamond reserves in Panna field are placed at 579,000 carats.

Dolomite

Occurrences of dolomite are widespread and are reported from Andhra Pradesh, Arunachal Pradesh, Gujarat, Karnataka, Madhya Pradesh, Maharashtra, Orissa, Uttar Pradesh and West Bengal. The total reserves of dolomite of all grades are placed at 509 crore tonnes.

Gold

There are three groups of gold mines in the country viz. Ramagiri gold field, Anantapur district, Andhra Pradesh; Kolar gold field, Kolar district and Hutti mine, Raichur district of Karnataka. Karnataka is the only gold producing state in the country. The estimated gold ore reserves in the country are placed at 87 lakh tonnes with a total gold content of 64.93 tonnes out of which Karnataka has about 58 lakh tonnes of gold ore reserves with a total metal content of 49.24 tonnes.

ire clay

India has vast resources of good quality fire clay use for making refractory bricks. The fire clays are distributed in Andhra Pradesh, Bihar, Gujarat, Karnataka, Kerala, Madhya Pradesh, Maharashtra, Meghalaya, Rajasthan, Tamil Nadu and West Bengal. The total all India reserves of fire clay are placed at 49.28 crore tonnes.

luorspar

Fluorspar occurs in Gujarat, Madhya Pradesh and Rajasthan from where a total reserves of 1.19 crore tonnes is reported.

ypsum

Deposits of gypsum are estimated at 124.86 crore tonnes in the country of which 107.08 crore tonnes are in Rajasthan, 14.93 crore tonnes in Jammu and Kashmir and 1.02 crore tonnes in Tamil Nadu.

Graphite	Graphite occurs in Orissa, Bihar, Andhra Pradesh, Rajasthan, Tami Nadu and Gujarat. The major producing state is however, Orissa The known reserves of graphite are 2.59 crore tonnes containing 1 to 40 per cent fixed carbon.
Ilmenite	It occurs mainly in the eastern and western coasts of India, associate with beach sands. Of the workable deposits of this type, those i Kerala, Orissa and Tamil Nadu are important. Total inferred reserve of ilmenite in beach sands have been put at over 5.4 crore tonnes.
Iron Ore	Large deposits occur in Bihar, Goa, Karnataka, Madhya Pradesh Maharashtra, Tamil Nadu and Orissa. The estimated reserves of iro ore in the country are placed at 1,757 crore tonnes of which 1,14 crore tonnes are hematite ore and 610 crore tonnes magnetite ore.
Kaolin	India possesses vast resources of kaolin and other clays. The majo states are Rajasthan, Andhra Pradesh, West Bengal, Delhi, Biha Kerala etc. Inventory of kaolin resources including white clay an ball clay is placed at 104 crore tonnes.
Lead-Zinc Ore	The known reserves of lead-zinc ore are located in Andhra Pradesh Gujarat, Orissa and Rajasthan. The total reserves have been estimated at about 35 crore tonnes which in terms of metal content amoun to 1.84 crore tonnes of lead and zinc.
Limestone	Limestone occurs extensively in the country and is produced in almos all the states. The major producing states are Madhya Pradesh Tamil Nadu, Andhra Pradesh, Gujarat, Bihar, Orissa, Rajasthan an Karnataka. The total reserves of limestone of all grades are placed a 7,320 crore tonnes.
Manganese Ore	Rich deposits of manganese ore are located in Andhra Pradesh, Goa Gujarat, Karnataka, Madhya Pradesh, Maharashtra and Orissa. Th total reserves are placed at 11.66 crore tonnes.
Mica	Economic deposits of mica ore are found in three important belts i Andhra Pradesh, Bihar and Rajasthan.
Nickel Ore	Nickel ore is found in Cuttack, Keonjhar and Mayurbhanj district of Orissa. The total reserves are placed at 16 crore tonnes.
Oil	The potential oil-bearing areas are located in Assam. Tripura, Manipur, West Bengal, Ganga Valley, Himachal Pradesh, Kachch and offshore areas adjoining West Bengal, Orissa, Andhra Pradesh, Tami Nadu, Karnataka, Maharashtra and Gujarat. The total known reserves of crude oil are estimated at 46.85 crore tonnes.
Phosphate Minerals	Deposits of phosphorites are located in Chhatarpur, Sagar and Jhabu districts of Madhya Pradesh, Udaipur, Jaisalmer and Banswara district of Rajasthan and Dehra Dun, Tehri and Lalitpur districts of Utta Pradesh. Besides, apatite deposits of commercial importance are reported to occur in Bihar, Andhra Pradesh, Rajasthan, West Benga and Tamil Nadu. The estimated reserves of rock phosphate in th country are placed at 13.86 crore tonnes.

Tungsten

Tungsten is reported from Rajasthan, West Bengal, Maharashtra and Karnataka. Some tungsten occurrences are also reported from Bihar and Uttar Pradesh. The all India reserves of tungsten ore have been estimated at about 1 crore tonnes containing about 5,370 tonnes of WO_3 (Tungstic oxide).

Refractory Minerals

Important deposits of magnesite are found in Salem district of Tamil Nadu; Almora, Chamoli and Pithoragarh districts of Uttar Pradesh and Mysore and Hassan districts of Karnataka. The total estimated reserves are about 21 crore tonnes. Kyanite and sillimanite are other important refractory minerals. Kyanite is located in Singhbhum district of Bihar, Bhandara district of Maharashtra; and in Karnataka. The total estimated reserves are about 30 lakh tonnes. Sillimanite deposits are located in Meghalaya, Maharashtra and Madhya Pradesh besides large placer sillimanite-occurs along with ilmenite and rutile in the beach sand deposits of Kerala, Orissa and Tamil Nadu. The total estimated reserves of sillimanite are 120 lakh tonnes.

Other Minerals

There are quite a few other minerals occurring in India, such as crysotile asbestos (Andhra Pradesh and Bihar), calcite (Gujarat, Madhya Pradesh, Rajasthan, Karnataka and Uttar Pradesh), corundum (Madhya Pradesh, Andhra Pradesh, Karnataka and Maharashtra), garnil (Rajasthan and Andhra Pradesh), beach sand (Tamil Nadu, Kerala and Orissa), emerald (Rajasthan), Felspar (Rajasthan, Andhra Pradesh, Karnataka and Tamil Nadu), pyrites (Bihar and Rajasthan), ochre (Karnataka and Rajasthan), steatite (Rajasthan, Andhra Pradesh, Bihar and Karnataka), vermiculite (Tamil Nadu, Andhra Pradesh, Rajasthan and Gujarat) and wollastonite (Rajasthan). Quartz and other silica minerals are widespread in occurrence and are reported from almost all the states in India.

MINERAL PRODUCTION

The total value of mineral production (excluding atomic minerals) increased considerably during the last decade from Rs 574.4 crore in 1973 to Rs 5,140.5 crore in 1982 and to Rs 6,543.4 crore in 1983. The share of mineral fuels was the largest being Rs 5,804.3 crore followed by non-metallic minerals Rs 372.3 crore and metallic minerals Rs 366.8 crore.

Quantity-wise among fuels the increase in the production of petroleum in 1983 as compared to 1982 was the highest being 25.8 per cent. Among the metallic minerals, the production of lead concentrate recorded the highest increase (54.4 per cent) followed by zinc concentrate (46.8 per cent). Maharashtra occupied the first place in the value of mineral production accounting for 34.2 per cent of the total value followed by Bihar, Assam, Madhya Pradesh and Gujarat.

MINERAL DEVELOPMENT

Under the Constitution, mineral rights and the administration of mining laws are vested in the state governments. The Central Government, however, regulates the development of minerals under the Mines and Minerals (Regulation and Development) Act, 1957 and the rules and regulations framed under it. This statute empowers the Centre to formulate rules for : (i) the grant to prospecting licences and mining leases, (ii) the conservation and development of minerals, and (iii) the modification of old leases. The Mines and Minerals (Regulation and Development) Act, 1957 came into force on 1 June 1958. A number of amendments to this Act were made in 1972.

EXPLORATION OF MINERALS

Some of the Organisations and public sector undertakings functio ing in the country for the mapping, exploration and exploitati of minerals are as follows:

Geological Survey of India

The Geological Survey of India (GSI) with headquarters at Calcut was established in 1851, largely for prospecting coal in easte India. The work was diversified in time and was intensified aft Independence to cater to the growing needs of industrialisation. Now GSI is the principal agency entrusted with all the geologic activities in the country.

Indian Bureau of Mines

The Indian Bureau of Mines (IBM) is a scientific and technic organisation under the Department of Mines, Ministry of Steel an Mines. It is primarily responsible for the promotion, conservatio and scientific development of mineral resources of the country (othe than coal, atomic minerals, petroleum and natural gas and mino minerals). It conducts research on mineral beneficiation of lo grade ores and minerals and on special mining problems and wor studies to aid improvements in productivity. IBM provides technic consultancy services in the fields of geology, mining and ore dressin to all categories of mines in public as well as private sectors. I conducts market survey to assist the mineral trade in the marketin of minerals and prepare inventory of mineral resources. The IB also functions as a data bank on mines and minerals and publishe periodically statistical information relating to mines and minerals. I brings out technical publications in the form of monographs on individual minerals and bulletins on different connected subjects.

The IBM has its headquarters at Nagpur and regional offices a Ajmer, Bangalore, Calcutta, Dehra Dun, Goa, Hyderabad, Hazaribag Jabalpur, Madras, Nellore and Udaipur. It has a well equippe laboratory and pilot plant for ore dressing research at Nagpur. Regional ore dressing laboratories have been established at Ajmer an Bangalore.

Public Sector Undertakings

The Department of Mines has six public sector enterprises under it charge. These are : The Hindustan Zinc Ltd. (HZL), Hindusta Copper Ltd. (HCL), Bharat Gold Mines Ltd. (BGML), Bharat Aluminium Co. Ltd. (BALCO), the National Aluminium Co. Ltd (NALCO) and the Mineral Exploration Corporation Ltd. (MECL) Out of these, the NALCO project is still at construction stage, MECL is concerned with mining and drilling operations and others are producing non-ferrous metals. In addition, the Government holds 4 per cent of the equity in Sikkim Mining Corporation. The Company produces copper, lead and zinc concentrates in small quantities

The first totally integrated aluminium complex in the public secto came into existence under BALCO. The company was incorporated on 27 November 1965 with the main objective of constructing, operating and managing aluminium projects. It has established an intgerate project at Korba in Madhya Pradesh based on bauxite deposits i Amarkantak/Phutkapahar areas. The alumina plant of the Korba Complex was commissioned in April 1973. Three of the four phases of the complex are in operation as on 1 January 1984.

The BALCO is to establish an alternative source of bauxite a the Gandhamardan mines in Orissa. The project was sanctioned in July 1982. An alumina plant in Andhra Pradesh with Soviet assistance is also under consideration. This envisages development of 2.3 m tonnes of bauxite per year, mainly for export to USSR. The Government has also assumed the management of Aluminium Corporation of India, Calcutta from 1 May 1978 and nominated BALCO to manage this unit.

The National Aluminium Company Ltd. (NALCO) was set up on 7 January 1981 for exploiting the bauxite deposits on the east coast. The integrated alumina/aluminium complex will be set up in Koraput district of Orissa. The bauxite mine is expected to commence operation in 1985. The registered office of the NALCO is in Bhubaneswar.

The Hindustan Zinc Ltd. (HZL), was incorporated in January 1966 to develop mining and smelting capacities for zinc and lead in the country. Starting with a 500 tonnes per day mine at Mochia in Rajasthan and a 3,600 tonnes per year lead smelter at Tundoor in Bihar, HZL today has seven operating mines with a capacity of 8,740 tonnes of ore per day and 3 smelters with a metal capacity of 93,000 tonnes per year. In addition to the primary metal zinc and lead, the product profile of the Company includes bye-products as cadmium (305 tonnes per year), silver (40 tonnes per year), sulphuric acid (1,62,000 tonnes per year), phosphoric acid (26,000 tonnes per year) and other items like single super phosphate, zinc sulphate, copper sulphate, etc.

The Hindustan Copper Ltd. was incorporated in November 1967 to take over from the National Mineral Development Corporation, the projects, schemes and studies pertaining to exploration, exploitation, mining and smelting of copper from Khetri, Kolihan, Dariba and Rakha copper projects. HCL has seven operating units as follows : Khetri Copper Complex in district Jhunjhunu, Rajasthan; Indian Copper Complex at Ghatsila, district Singhbhum, Bihar; Malanjkhand Copper Project in district Balaghat, Madhya Pradesh; Rakha Copper Project in district Singabhum, Bihar; Dariba Copper Project in district Alwar, Rajasthan, Chandmari Copper Project in district Jhunjhunu, Rajasthan and Lapso Kyanite Mines in district Singhbhum, Bihar. HCL is at present the sole producer of primary copper in the country. But it is also associated in the recovery of precious metal and mining found as traces in copper. These include gold, silver, selenium, tellurium and nickel and nickel sulphate.

The Bharat Gold Mines Ltd. (BGML) is the foremost producer of gold in the country, the other being Hutti Gold Mines Ltd. (HGML), the enterprise of the Karnataka Government. The BGML operates the world famous Kolar Gold Mines. Gold mining in Kolar started in 1880 under a private company which continued till 1956 when the mines were nationalised. The BGML was incorporated in 1972 to take over and operate these mines. There are 3 working mines in the Kolar Gold Field *viz.* Mysore Mines, Nundydroog and Champion Reef. The Mysore Mine is almost fully worked out and will be phased out in the next five years. Mining of this universally coveted metal is carried out under extremely difficult conditions. Mining has reached the extreme depths at Kolar Gold Fields. The Gifford shaft now measures 2,190 metre from the ground and is perhaps the deepest mine in the world. The gold extracted in 1982-83 was at a grade of 3.77 gm per tonne of ore milled. The Company is actively engaged in bringing a new gold mine into production at Yeppamana (Ramagiri Gold Field) in Dharmavaram taluk of Anantapur district in Andhra Pradesh. The

Yeppamana mine is a 250 tpd mine which will start production 1984-85.

Sikkim Mining Corporation, a joint venture of the Central Gover ment and the Sikkim Government, has been working the Bhotang pol metal ore deposit at Rangpo in Sikkim. The ore is treated for produ tion of copper, lead and zinc concentrates at the beneficiation pla at Rangpo.

The Mineral Exploration Corporation was registered in 19 for undertaking detailed mineral exploration for assessing the mine reserves of the country and providing consultancy/expert services turn-key mineral projects. Besides, the Corporation is engaged mine construction, geo-technical work at dam cites and drilling a construction of tubewells. The Corporation, with its headquarte at Nagpur carries out detailed mineral exploration on behalf of t Government as promotional activity and for public and private sect enterprises and organisations, state governments, etc., on contractu basis. The Corporation has recently been shortlisted as consultan organisation by the World Bank for a prestigious coal explorati project in Tanzania. It may be mentioned that the entire explorati activities of the corporation are being carried out by Indian expe without assistance from foreign consultancy organisations or speci lists.

PLANTATION INDUSTRIES

Plantations sector plays an important role in the foreign trade India. Tea, coffee and cardamom are some of the main items contr buting to India's export earnings.

TEA

Tea industry is a major foreign exchange earner for India, in additi to providing employment to over 10 lakh persons directly and anoth 10 lakh persons indirectly by way of ancillary occupation. Duri 1983, tea production was estimated at 58.77 crore kg as compared 56.07 crore kg in 1982.

The Tea Board, which is a principal agency for the developme of the tea industry, is implementing a number of schemes to increa production. These include long-term loans to tea estates, provisi of facilities for acquiring machinery on hire purchase basis and gra of subsidy to the industry for replanting over-aged tea bushes.

The Tea Trading Corporation of India was established in 19 to create a stable export market for Indian teas, particularly in the value added form, namely, packaged tea, tea bags, instant tea, e Other activities of the Corporation include marketing of tea f domestic consumption, management of tea gardens, warehousing tea and establishment of other facilities beneficial to the tea indust

The India Tea and Restaurants Ltd., a joint venture of the T Board and Hotel Corporation of India, was set up in 1981 to ta over the tea centres run by the Tea Board for the promotion of Indi tea abroad.

COFFEE

Production of coffee during 1982-83 season is estimated to be arou 1.30 lakh tonnes. The exports of coffee during 1982-83 were of t order of 83,784 tonnes valued at Rs 203 crore with a unit value of Rs 24,229 per tonne. The Coffee Board, which is responsible for the development of coffee industry, has undertaken the coffee development plan to improve the yield and quality of coffee. For this purpose, it advances loans to coffee growers.

CARDAMOM

At present, the cultivation of cardamom is largely confined to Kerala, Tamil Nadu and Karnataka. Production of small cardamom during 1982-83 was 2,800 tonnes. During 1982-83, 1,021 tonnes of cardamom worth Rs 16.23 crore with a unit value of Rs 158.96 per kg were exported.

RUBBER

The figures of production, import and consumption of rubber during 1983-84 was 1,75,280 tonnes (natural), 35,940 tonnes (natural) and 2,09,840 tonnes (natural) respectively.

The Rubber Board looks after the development of rubber plantation industry.

VILLAGE AND SMALL INDUSTRIES

The development of small scale industries has been given high priority in successive five year plans in view of its advantages in terms of low investment, high potential for employment generation and dispersal of industries especially in rural and semi-urban areas. The importance of this sector has been further highlighted by its inclusion in the Revised 20-Point Programme which lays emphasis on giving handicrafts, handlooms, small and village industries all facilities to grow and to up-date their technology.

Growth

Small scale industries have grown phenomenally during the last decade and the sector today occupies a position of unique importance in the economy of the country. Village and small scale industries taken together account for about 49 per cent of the total industrial production and the contribution of industries falling under the purview of Small Industries Development Organisation is about 33 per cent.

During 1982-83, value of production of small scale units was about Rs. 35,000 crore (Rs. 27,700 crore at 1979-80 prices). The small scale sector provided employment to about 79 lakh persons. The exports from this sector are estimated to have increased during the year to the tune of Rs. 2,100 crore.

Definition

The investment limit in the definition of small scale industries was revised upward in 1980 from Rs 10 lakh investment in plant and machinery to Rs 20 lakh and in case of ancillary units from Rs 15 lakh to Rs 25 lakh. In 1982, it was decided that all service oriented enterprises would also be eligible to be registered as small scale establishments provided these are set up in rural areas and towns with a population of 5 lakh or less and subject to a ceiling on investment in plant and machinery of Rs 2 lakh. On being so registered they would be entitled to the same concessions and incentives as available to small scale and ancillary industries.

Import Policy

The Government has liberalised the import policy and streamlined the distribution system of critical raw-materials. These liberalisations include expansion of the list of items under open general licence

(OGL). Eighty new items of raw materials, components and consum
ables have been allowed for import under OGL to actual users (indu
trial). The system of prior registration of import contracts for OG
items in force for certain items such as man-made fibre and yarn ha
now been extended to a number of other items. Certain items
raw materials and components have been taken out of OGL in vie
of indigenous production. Thirteen items of capital goods have bee
taken out of OGL on account of their indigenous development. A
a measure of procedural simplification, the industrial units havin
substantial export performance which have been given the facilit
of repeat operation of their automatic licence will also have the facilit
to utilise on a repeat basis even their supplementary licences issue
for 1982-83 irrespective of their value. Here, the repeat operatio
will be for the same value and the same item with additional perio
of 12 months for shipment.

In 1982-83, a new dimension was given to the duty exemptio
scheme by extending it to the manufacturers of intermediate product
where such products are ultimately used for export production. Thi
scheme continues for 1983-84 with further addition of products t
the scheme. The scheme now covers 20 products in all. Certai
items of specialised value which were not bulkable have been decana
lised and the list of canalised imports has been renewed and a numbe
of new items have been added to the list. Procedural formalitie
for obtaining import licence have been dispensed with or curtaile
particularly for the benefit of small scale units.

District Industries Centres

The set-up of the district industries centres (DIC) is being restructure
with a view to strengthening their technological competence in th
fields offering promising prospects in the respective districts. Th
total number of approved DIC now stands at 395 which cover 40
total number of approved DIC now stands at 395. Metropolitan citie
—Bombay, Delhi, Calcutta and Madras are outside the purview of th
DIC programme.

During 1982-83 in 379 DICs which had sent progress reports
3.65 lakh new units comprising of 2.91 lakh artisan-oriented unit
and 74,000 small scale units were established which had create
additional employment opportunities to 11.82 lakh persons.

Credit Facilities

The Reserve Bank of India has advised the banks to ensure that a
least 40 per cent of their total advances are extended to priorit
sector by the end of 1985 and the small scale sector is one of th
sectors within the priority categories. The share of th
small scale sector in the total outstandings of the priority sector a
the end of December 1982 was 36 per cent. The number of smal
scale units/borrowers assisted by the public sector banks at the en
of December 1982 was about 11 lakhs and the amount of outstandin
to the small scale sector Rs 4,082 crore. The amount of financia
assistance sanctioned by the State Financial Corporations to smal
scale industries was Rs 348 crore and the amount disbursed Rs 20
crore.

Small Industries

Small Industries Development Organisation provides a comprehensiv
range of consultancy services and technical, managerial, economi

evelopment
rganisation

and marketing assistance to the small scale units through its network of 26 Small Industries Service Institutes (SISIs), 25 Branch SISIs, 40 Extension Centres, 4 Regional Testing Centres, 4 Product-cum-Process Development Centres, 2 Footwear Training Centres and 4 Production Centres. The institutional network is now being extended by setting up another 7 Branch Institutes in backward areas.

Four Regional Testing Centres at Bombay, Calcutta, Madras and New Delhi provide testing facilities in mechanical, metallurgical, chemical and electrical trades. In addition, action to establish 20 Field Testing Stations covering a wide spectrum of small scale industrial products has also been initiated.

The Central Tool Room and Training Centre, Calcutta, provides tools and conducts regular and short-term training courses in tool making. The Central Tool Room and Training Centre, Ludhiana started functioning from November 1980.

The Central Institute of Tools Design (CITD), Hyderabad and Institute for Design of Electrical Measuring Instruments (IDEMI), Bombay are providing technical guidance and training to entrepreneurs. A Process and Product Development Centre for Domestic Electrical Appliances and Evaluation Centre for process control instruments is also being established at this Institute with UNDP assistance. The Central Institute of Hand Tool, a new project (with UNDP assistance) has been started at Jalandhar.

The Small Industries Extension Training Institute (SIETI), Hyderabad has grown into an institution of national importance in offering training, research and consultancy services to small scale industries.

Process and Product Development Centres at Agra and Meerut (with UNDP assistance) have been approved and provide benefits to casting, forging and sports goods industry in the small scale sector. Process and Product Development Centre at Ranchi for glass and ceramics industries has been revamped to provide testing facilities to glass and ceramic industries.

National
Awards

The Government have introduced a scheme for giving national awards annually for recognising and promoting entrepreneurship in the small scale sector. The first three all India awards carry a cash prize of Rs 25,000, Rs 20,000 and Rs 15,000 respectively. Special recognition awards with the prize money of Rs 10,000 will be conferred on one entrepreneur in the small scale industries in each state/union territory as a recognition of his outstanding performance in this sector.

Unemployed
Youth

The scheme for providing self-employment to the educated unemployed youths is being implemented all over the country through District Industries Centres excepting the towns having population of more than 10 lakh. The salient features of the scheme are :

(i) Educated unemployed youth having passed matriculation examination and above and within the age bracket of 18-35 are eligible to get assistance under the scheme.

(ii) The identified beneficiaries are entitled to get a loan upto Rs 25,000 from nationalised banks on the recommendations of DIC Task Force for setting up small industry, service and small business establishments.

(iii) An outright capital subsidy of 25 per cent will be paid b Government to the lending institutions for each loa given to identified educated unemployed youth.

(iv) A target of 2.50 lakh has been fixed for the scheme durin 1983-84 and it has been allocated among states|unior territory administrations.

NIESBD

A National Board for Entrepreneurial Development and a Nationa Institute for Entrepreneurship and Small Business Developmen (NIESBD) were established in 1983 for laying down policies, reviewing the programmes and co-ordinating the activities and programmes o various agencies in the field of entrepreneurship development and als for undertaking specific programme as per the requirement of differen target groups. The Institute is to organise and conduct training programmes for motivators, trainers and entrepreneurs, prepare mode syllabus of training for various groups of entrepreneurs in the country hold examinations and tests, undertake documentation and researc in the field of entrepreneurship and small business development an conduct seminars, workshops and conferences, etc., for officers/ motivators in the field of entrepreneurial and business development

The Institute as an apex national level institute, will serve as a forum for interaction and exchange of views with agencies and institutions engaged in various aspects of entrepreneurship in small industrie and also small business development.

National Small Industries Corporation

The National Small Industries Corporation Ltd. (NSIC) which was set up in 1955, operates the scheme of supplying machinery to small scale industrial units on easy hire purchase terms. It assists small scale units in procuring orders from Government departments and offices. During 1982-83 the Corporation registered 2,015 small scale units for participation in Government Store Purchase Programme. The number of units assisted by NSIC under hire-purchase scheme was 1,124 during 1982-83 and machinery with a hire-purchase value of Rs 17.54 crore was supplied.

The Corporation through its Prototype Development and Training Centres at Okhla (New Delhi), Howrah, Rajkot and Madras is imparting training in several technical trades. The PDTCs develop prototypes of machines and equipments and transfer them to small scale units for commercial production.

Besides this, the Corporation helps the small scale units in the procurement of scarce and imported raw material, marketing products at home and abroad and export turnkey projects to other developing countries of the world.

HANDICRAFTS

Handicrafts include a large number of crafts which are backed by centuries of experience and skill. This sector plays an important role in the Indian economy by providing employment opportunities and helping the country to earn foreign exchange. In 1983-84, the exports of handicrafts (including gem and jewellery) rose to Rs 1,669.78 crore.

To advise the Government on matters relating to development of handlooms and handicrafts, All India Handlooms and Handicrafts Board was set up in July 1981. The office of the Development Commissioner (Handicrafts) is, however, responsible for implementation of various schemes for development of handicrafts in the Central sector. It has five regional offices at Bombay, Calcutta, Madras, Lucknow and New Delhi. Four Regional Design and Technical Development Centres at Calcutta, Bombay, Bangalore and New Delhi and a Crafts Museum at New Delhi have also been set up. On recommendations of an expert committee, Design Centres have been converted into an autonomous *samiti* under the name and tile of *Rangatantra* so as to enable them to function more effectively.

IANDLOOMS Handlooms sector has been given very high importance both in the national textile policy as well as the Sixth Plan document and forms an important plank in the Revised 20-Point Programme. The industry provides largest employment in the decentralised sector next only to agriculture. In accordance with the Government's policy of enlarging the co-operative coverage, in order to provide an organisational infrastructure, the coverage is estimated to have increased to nearly 17 lakh looms by the end of 1983-84. The production target in the handloom sector, which was originally fixed at 410 crore metres for the Sixth Plan has been revised to 370 crore metres and the production for 1982-83 was estimated to be 325.30 crore metres. In the export field handlooms have registered significant gains, actual figures increasing from Rs 11.6 crore in 1967-68 to Rs 261.47 crore in 1983-84 (upto January 1984).

)GTD The Directorate General of Technical Development (DGTD) is the technical advisory body of the Government in respect of all sectors of industries excluding steel, mines, textiles, jute, coal, sugar and *vanaspati*. The DGTD under the administrative charge of the Ministry of Industry, examines from technical view point proposals for industrial licence, foreign collaboration, import of capital goods, raw materials and components. It examines and monitors the phased indigenisation programme of the manufacturing units in the engineering as well as chemical sectors. It offers technical comments on foreign trade, import/export policies, and customs and excise tariffs. It is, however, primarily responsible for overall planned development of various sectors of industry. It also prepares estimates of demand, and evaluates the status of technology for various industries and after comparing the available capacity, makes suitable recommendation for bridging the gaps..

Although a wide range of industries fall under the purview of the DGTD, the growth of 132 selected industries is being monitored closely. These industries cover an overall weight of 39.7 in the general index of industrial production with 1970 base as 100.

The DGTD is the technical authority for registration of units with investment in plant and machinery upto Rs 5 crore and with requirements of foreign exchange for raw materials and components within specified limits. Such units which are exempt from industrial licensing are required to be registered with the DGTD. Registration of such units has shown a significant growth. During 1983, 2,024 schemes were registered as against 1,538 during 1982. More than 50 per cent of the units registered are proposed to be established in backward areas. Registration in backward areas has shown a significant growth during 1982 *i.e.* 1,155 in 1983 as against 704 in 1982.

Major thrust of industries registered during 1983 has been towards industrial machinery for which 526 units were registered. This was followed by oil and soap industry (273 units), metallurgical industries

(224 units), and instruments industries (202 units). In terms o regional distribution, the largest share goes to Uttar Pradesh (32 units), followed by Haryana (266 units), Maharashtra (231 units) and Madhya Pradesh (183 units).

The policy of regional dispersal of industries in backward areas i also being followed by the DGTD while granting registration to variou units. The trend of increased registrations in backward areas as wel as other areas is likely to continue.

INDUSTRIAL SICKNESS

Data on sick industrial units assisted by banks are being collected b the Reserve Bank of India (RBI) as per the definition of 'sickness adopted by it. A unit is classified as 'sick' if it incurs cash losses fo one year and in the judgement of the financing bank, is likely to incu cash losses for the current year as well as the following year and whicl has an imbalance in its financial structure, such as, current ratio o less than 1:1 and worsening debt-equity ratio (total outstanding liabi lities to net worth).

The RBI has been collecting data on large sick units since 197 and in respect of all units *i.e.* large, medium and small scale unit since 1979. Table 19.9 shows the number of sick units from 197 onwards.

TABLE 19.9
SICK INDUSTRIAL UNDERTAKINGS

Number of Sick Units as at the end of	Large Units[1]	Medium Units[2]	Small Scale Units	Total
December 1976 . . .	241			
December 1977 . . .	289			
December 1978 . . .	344			
December 1979 . . .	378	1,013	20,975	22,366
December 1980 . . .	409	992	23,149	24,550
December 1981 . . .	422	994	25,342	26,758
December 1982 . . .	444	1,178	58,551[3]	60,173
Outstanding amounts as at the end of (Rs in crore)				
December 1976 . . .	609			
December 1977 . . .	858			
December 1978 . . .	1,061			
December 1979 . . .	1,158	203	262	1,623
December 1980 . . .	1,324	179	306	1,809
December 1981 . . .	1,479	188	359	2,026
December 1982 . . .	1,791	225	569	2,585

1. Units enjoying bank credit facility of Rs one crore and above.
2. Units enjoying bank credit of less than one crore but other than small scale units.
3. Not comparable with the data for earlier years as the State Bank of India has included small scale units in protested bills/recalled accounts in its list of sick units, which were not included in the data furnished earlier.

Causes of Industrial Sickness

A number of causes both internal and external, often operating i combination have been responsible for industrial sickness in th country. Some of the principal causes of industrial sickness are fault planning, management deficiencies, inefficient financial control, diver sion of resources, inadequate attention to research and development, obsolescence of technology and machinery, poor industrial relations, inadequacy of demand, shortage of raw materials and other inputs and infrastructural constraints.

bilitation

Some of the steps taken by the banks for the rehabilitation of sick industrial units are :—

(i) A sick industrial undertakings cell has been set up in RBI to function as a clearing house for information relating to sick units and to act as a co-ordinating agency between the Government banks, financial institutions and other agencies for taking various related issues.

(ii) State level inter-institutional committees have been set up at all the regional offices of the Department of Banking Operations and Developments of RBI for ensuring better co-ordination between the banks, the state governments, Central and state level financial institutions and other agencies.

(iii) A standing co-ordination committee has been constituted by RBI to consider the issues relating to co-ordination between commercial banks and term lending institutions on an on-going basis.

(iv) RBI has issued suitable guidelines to the banks and with a view to ensuring that the potentially viable sick units in the small scale industries sector receive due attention and timely support from banks.

icy on
Industries

To meet the situation of industrial sickness in the country the Government announced policy guidelines in October 1981 which was subsequently modified in February 1982 for guidance of Central Ministries, state governments and financial institutions. The salient features of the guidelines are :

(i) The administrative ministries in the Central Government will have specific responsibility for prevention and remedial action in relation to sickness in industrial sector within their respective charge. They will have a Central role in monitoring sickness and co-ordinating action for revival and rehabilitation of sick units.

(ii) The financial institutions will strengthen the monitoring system so that it is possible to take timely corrective action to prevent incipient sickness. They will obtain periodical returns from the assisted units and from the Directors nominated by them on the Boards of such units. These will be analysed by Industrial Development Bank of India and results of the analysis conveyed to the financial institutions concerned and the Government.

(iii) The financial institutions and banks will initiate necessary corrective action for sick or incipient sick units based on a diagnostic study. In case of growing sickness, the financial institutions will consider assumption of management responsibility where they are confident of restoring a unit to health.

(iv) Where the banks and financial institutions are unable to prevent sickness or ensure revival of a sick unit, they will deal with their outstanding dues to the unit in accordance with the normal banking procedures. However, before doing so, they will report the matter to the Government who will decide whether the unit should be nationalised or whether any other alternative including workers' participation in the management can revive the undertaking.

(v) Where it is decided to nationalise the undertakings, its management may be taken over under the provisions of the Industries (Development and Regulation) Act, 1951, for a period of six months enable the Government to take necessary steps for nationalisation. (vi) The industrial undertakings presently being managed under t provisions of the Industries (Development and Regulation) Act, 195 will also be dealt with in accordance with the above principles. will be decided if the undertakings are to be nationalised or any oth alternatives can provide a solution. If none of the alternative is co sidered feasible, the Government may consider de-notification of t unit.

Units Managed under I(DR) Act

Government have taken over management of a number of sick indu trial undertakings under the provisions of the Industries (Developme and Regulation) Act with a view to reviving them by providi management support and financial assistance through banks and fina cial institutions. Thirty eight industrial undertakings are present being managed as on July 1984. Take over of management has, ho ever, not so far proved as an effeitive instrument for revival of si units. The present policy does not favour management takeove except as a stop-gap arrangement for units to be nationalised. Numb of units taken over under the I(DR) Act has accordingly gone dow from 9 in 1979 to only 1 in 1982. No unit has been taken over 1983 and 1984 (upto July) so far.

The policy guidelines announced in October 1981 requires th decision on future of the IDR managed units should be taken imm diately. Various alternatives are to be considered for the purpose *e.* nationalisation, restructuring, merger with healthy companies, et failing which, the unit may be denotified, which may result in i closure. Three units have been denotified during 1983. These thr units were basically non-viable and revival schemes proved unavailin No healthy unit was also prepared to take responsibility of nursing a of them.

Five units, the managements of which was taken over under I(DR Act were nationalised during 1982 following the October 1981 poli guidelines. One unit was nationalised in 1983. Eight units ha been nationalised so far during 1984 (upto July).

Concessions

Government have provided certain concessions to assist revival sick units without direct intervention. These are : (i) Governme had amended the Income Tax Act, in 1977 by addition of Section 72 by which tax benefit can be given to healthy units when they take ov the sick units by amalgamation with a view to reviving them. Th tax benefit is in the form of carry forward of the accumulated busine losses and unprovided depreciation of the sick companies by th healthy companies after amalgamation. (ii) A scheme for provisio of margin money to sick units in the small scale sector at soft term to enable them to obtain necessary funds from banks and financi institutions to implement their revival scheme has been introduce from 1 January 1982.

FOREIGN CAPITAL

To supplement the capital resources and know-how for rapid indu trial development, the Government allows foreign assistance desirable cases. The policy in regard to foreign capital is govern by the Industrial Policy Resolution of 1948 and the Prime Ministe statement in the Constituent Assembly in 1949. Under this, th

Government's policy towards foreign investment is selective and aims at filling technological gaps and expanding exports. Foreign capital is not permitted in the fields of banking, commerce, finance, plantation, trading and consumer industries. Certain liberalised facilities for investment in India have, however, been now made available to investors from oil-exporting developing countries and non-resident Indians.

Under Section 29 of the Foreign Exchange Regulation Act, 1973, companies incorporated abroad and Indian companies having more than 40 per cent non-resident interest are required to obtain fresh permission of the Reserve Bank of India to carry on their existing business activities in India.

According to the guidelines issued by the Government, branches of foreign companies were required to convert into Indian companies with foreign holding ranging from 40 per cent, 51 per cent and 74 per cent. The Indian companies with more than 40 per cent non-resident interest were required to reduce the foreign holdings to 74 per cent or 51 per cent or 40 per cent depending upon the nature of business activities. Dilution process under FERA is nearly over and this was achieved smoothly.

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20 COMMERCE

EXTERNAL TRADE

India's pattern of trade before Independence was traditionally that c a colonial and agricultural country. The bulk of her foreign trade wa confined to Britain and other Commonwealth countries. While export were based on a few primary commodities, imports were restricted an consisted mainly of manufactured articles. Though, on the surface there was a favourable balance of trade, it concealed a low level o industrial production and economic development.

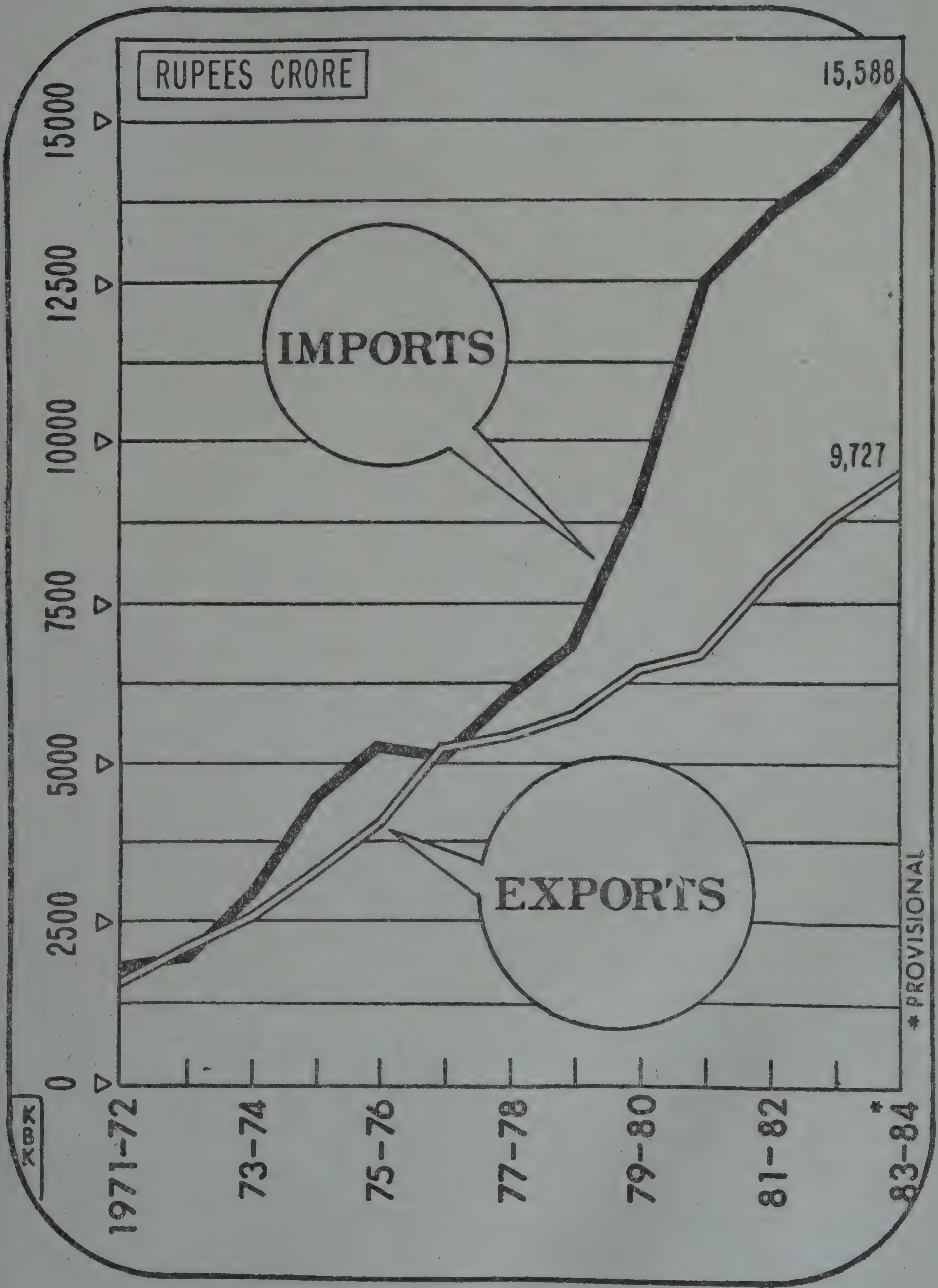
With the impressive industrial development since 1947, India' foreign trade has undergone a complete change and is no longer con fined to a few countries trading in a few commodities. She, now, ha trading links with practically all the countries of the world. Th number of commodities being traded in India's foreign trade, either fo purpose of exports or imports are now nearly 6,660. The export cover a wide range of items of agricultural and industrial sectors an various handicrafts, handloom, cottage and craft articles. Projec exports which include consultancy, civil construction and turn-key con tracts have also made a significant progress in recent years.

Similarly, there has been a substantial increase in imports o account of the development needs of the economy. The compositio of imports has, naturally, undergone a great change. The bulk c the imports now consists of sophisticated machines, scarce raw mate rials, lubricants, oils and fertilizers which are essential for the country' industrial and agricultural development. In the last few years, th country has been having a large adverse balance of trade on account c heavy imports necessary for the development as well as for reasons c steep hike in world prices of major imports particularly petroleur and petroleum products, fertilizers, etc.

VALUE OF FOREIGN TRADE

The total turn-over of India's foreign trade (imports plus exports in cluding re-exports) is steadily rising and it has more than doubled i the course of last five years from a level of Rs 11,428 crore in 1977-7

INDIA'S FOREIGN TRADE



to Rs 23,194 crore in 1982-83. The trade turn-over on provisional basis further increased to Rs 24,743 crore in 1983-84. The value o imports and exports, the total value of foreign trade and its balance o trade for selected years since 1950-51 are given in table 20.1.

TABLE 20.1
FOREIGN TRADE OF INDIA

(value in Rs crore)

Year	Imports	Exports (including re-exports)	Total value of Foreign Trade	Balance of Trade
1950—51 . . .	650 ·21	600 ·64	1,250 ·85	—49 ·57
1960—61 . . .	1,139 ·69	660 ·22	1,799 ·91	—479 ·47
1970—71 . .	1,634 ·20	1,535.16	3,169 ·36	—99 ·04
1971—72 . . .	1,824 ·54	1,608 ·82	3,433 ·36	—215 ·72
1972—73 . . .	1,867 ·44	1,970 ·83	3,838 ·27	+103 ·39
1973—74 . . .	2,955 ·37	2,523 ·40	5,478 ·77	—431 ·97
1974—75 . . .	4,518 ·78	3,328 ·83	7,847 ·61	—1,189 ·95
1975—76 . . .	5,264 ·78	4,036 ·26	9,301 ·04	—1,228 ·52
1976—77 . . .	5,073 ·79	5,142 ·71	10,216 ·50	+68 ·92
1977—78 . . .	6,020 ·23	5,407 ·87	11,428 ·10	—612 ·36
1978—79 . . .	6,810 ·64	5,726 ·07	12,536 ·71	—1,084 ·57
1979—80 . . .	9,142 ·58	6,418 ·43	15,561 ·01	—2,724 ·15
1980—81 . . .	12,549 ·15	6,710 ·70	19,259 ·85	—5,838 ·45
1981—82 . . .	13,607 ·56	7,805 ·90	21,413 ·46	—5,801 ·66
1982—83 . . .	14,359 ·99	8,834 ·21	23,194 ·20	—5,525 ·78
1983—84 . . .	15,587 ·77	9,726 ·80	25,314 ·57	—5,860 ·97

1. 1983-84 figures are provisional and updated till June 1984.

The country is generally having adverse balance of trade owing to an increase in imports needed to meet the requirements of development accompanied by relatively slow growth of exports in the background of large domestic market with rising demand. At times, there have been periods when India's foreign trade witnessed modest surpluses. In 1972-73, as a result of an appreciable increase in exports, the balance of trade turned into a favourable one for the first time during the last 26 years. It was once again in 1976-77 when India's trade was in surplus to the extent of Rs 68.92 crore due to faster growth in the exports and a slight fall in imports. The subsequent years were marked by rising trade deficit. India's external trade and balance of payment situation has been under severe strains since 1979-80. During this period, there has been a sharp increase in India's foreign trade deficit, chiefly on account of disproportionate rise in import bill in the wake of steep hike in world prices of major imports, particularly those of petroleum and petroleum products. The deficit of foreign trade which stood at Rs 1,085 crore in 1978-79 increased to Rs 2,724 crore in 1979-80 and to Rs 5,838 crore in 1980-81. The growth of exports during 1980-81 was hampered by the poor performance of Indian economy in 1979-80 and the first half of 1980-81 under the effects of droughts, characterised by low production levels, lack of infra-structural facilities for export production and domestic inflation. The resultant domestic shortages also necessitated higher imports o essential commodities which inflated the import bill. The international environment was also not conducive to growth of exports following world recession, prevalence of fluctuating exchange rate and new type of tariff, non-tariff and other protectionist measures followed by developed countries. However, as a result of various measures taken by the Government in the direction of export production and export marketing, 1981-82 and 1982-83 have shown distinct improvement in the performance of India's foreign trade.

The years 1981-82 and 1982-83 witnessed an acceleration in the rate of growth of export and a deceleration in the rate of growth of imports thereby arresting the trend of rapid growth in trade deficit, experienced during 1977-78 to 1980-81. It is significant that the annual growth in the value of exports moved up from 4.6 per cent in 1980-81 to 16.3 per cent in 1981-82 and 13.2 per cent in 1982-83 whereas the annual growth in the import bill dropped from a level of 37.3 per cent in 1980-81 to 8.4 per cent in 1981-82 and 5.5 per cent in 1982-83. As a result, the balance of trade deficit somewhat declined from Rs 5,838 crore in 1980-81 to Rs 5,802 crore in 1981-82 and Rs 5,526 crore in 1982-83.

The provisional figures of India's foreign trade for 1983-84 as per March 1984 Press Note place exports at Rs 9,396.15 crore and imports at Rs 15,347.31 crore as compared to corresponding provisional exports and imports of Rs 8,637.68 crore and Rs 14,047.28 crore respectively during 1982-83. Thus, on a provisional basis, exports during 1983-84 registered a rise of 8.8 per cent whereas imports grew at a higher rate of 9.3 per cent, as a result of which the deficit in India's foreign trade increased by about Rs 541 crore in 1983-84. However, it is important to note that until the first 10 months of 1983-84, the balance of trade deficit continued to be lower than it was in the corresponding period of 1982-83, and during this period exports were up by 12.7 per cent whereas imports increased by about 2.5 per cent. Apart from the continued adverse environment in international trade, the higher trade deficit at the end of 1983-84 is attributable to the stoppage of export shipments during the port and dock workers strike (from 16 March 1984 to 10 April 1984) and the significant increase in imports during the three-month period from December 1983 to February 1984 to meet the growing needs of domestic economy. During the first eleven months of 1983-84 India's overall exports, on provisional basis, registered a growth rate of more than 12 per cent. On account of the ports strike in the later half of March, the growth rate was 8.8 per cent at the end of 1983-84. While it is difficult to estimate the loss in exports on account of strike, it is likely that export worth Rs 550 to Rs 600 crore were not shipped in the later half of March 1984. Had it not been for this disruption, exports would have exceeded the level of Rs 10,000 crore during 1983-84.

ATTERN
F EXPORT
RADE

Exports, which had been more or less stagnant during the decade 1951–60, averaging a little over Rs 600 crore per annum, started showing some improvement between 1961 and 1966. Exports, however, showed a continued rise during the post-devaluation years, though the rate of increase has been varying from year to year depending on the domestic and international situation. From a level of Rs 1,093.78 crore in the devaluation year 1966-67, the exports after a decade were valued at Rs 5,142.71 crore in 1976-77. The uptrend continued and by 1982-83 the exports touched a figure of Rs 8,834.21 crore. Exports during 1983-84 on provisional basis amounted to Rs 9,396.15 crore which are likely to reach in the range of

Rs 9,700—Rs 9,750 crore on receipt of complete trade returns. It is worth noting that until June 1984, the exports and imports for 1983-84 now stood updated to Rs 9,726.80 crore and Rs 15,587.77 crore registering a growth rate of 10.7 per cent and 8.5 per cent respectively over the final levels of exports and imports during 1982-83.

The exports have not only gone up, but also witnessed an increasing diversification over the years. The increase has been well-spread over a number of commodities such as capital goods and other engineering items, chemicals and chemical products, leather and leather manufactures, garments, silk, rayon and woollen textiles, gems and jewellery, handicrafts, processed food and marine products, etc. Emphasis is also laid on the exports of traditional items like plantation crops, agricultural items, ores and minerals, cotton and jute manufactures.

Among the dynamic sectors, exports of engineering goods, during the decade went up from Rs 122 crore in 1971-72 to Rs 939 crore in 1981-82, leather and leather products (including footwear) from Rs 102 crore to Rs 406 crore; pearls, precious and semi-precious stones from Rs 52 crore to Rs 761 crore; readymade garments from Rs 14 crore to Rs 596 crore; chemicals and allied products from Rs 30 crore to Rs 364 crore, fish and fish preparations from Rs 41 crore to Rs 280 crore; and handmade carpets from Rs 12 crore to Rs 181 crore.

Although the major traditional exports like tea, jute manufactures and cotton fabrics have tended to increase in value terms, these have been subject to considerable fluctuation over the period depending on the demand and supply position in the international market.

The world trade and economic situation has become increasingly difficult in recent years for the exports of many of the commodities and manufactures. The persistent recession in the industrialised countries, associated with high levels of unemployment, has led to increase protectionism in the world economy, which has had serious repercussions on the export prospects of developing countries like India. The past few years have witnessed a marked deceleration in the growth of world trade. In sharp contrast with the phenomenal expansion in international trade during the quarter century from 1950 to 1975, the volume of world trade increased at an average rate of about 5 per cent per annum from 1975 to 1979, by 1.5 per cent in 1980, remained stagnant in 1981 and declined in 1982. In this context, it is worth noting that India's export earnings increased by 16.3 per cent in 1981-82 and by 13.2 per cent in 1982-83. Thus, in recent years, country's export performance has been creditable in so far as it has made the best of a difficult international economic situation. Table 20.2 shows the export of selected commodities for the last three years.

The trends in India's principal exports reveal that the commodity groups which registered a significant increase in export earnings during 1982-83, as compared to 1981-82, include coffee, oil cakes, marine products, raw cotton, fruits and vegetables, and gems and jewellery. Exports of iron ore and tobacco also showed some increases. Exports of crude oil were substantial at a level of Rs 1,023 crore in 1982-83 and emerged as an important source of foreign exchange earnings. On the other hand, exports of a number of manufactured goods such as textiles (including readymade garments), machinery and transport equipment, Chemicals and allied products, leather and leather manufactures and handmade carpets witnessed a decline during 1982-83 because of recessionary conditions in the world economy and protectionist policies pursued by the industrialised countries. Some traditional items like tea, rice, jute manufactures, spices and cashew kernels also suffered a setback due to sluggish demand and severe competition in overseas markets. However, in the case of items such as tea and rice, supply constraints in respect of exportable varieties were also partly responsible for the decline in exports during 1982-83.

TABLE 20.2
EXPORT OF SELECTED COMMODITIES

(Value in Rs crore)

	1980-81	1981-82	1982-83
1. Tea and mate . . .	367·8	425·50	395·20
2. Coffee	214·24	146·29	184·20
3. Tobacco unmanufactured . .	124·41	204·93	208·54
4. Cashew Kernels . . .	140·13	181·5	133·9
5. Spices	111·4	98·76	88·93
6. Oil cakes	125·08	117·85	149·35
7. Fish and fish preparations .	212·89	280·34	349·45
8. Iron Ore	303·33	351·75	373·75
9. Cotton fabrics . . .	276·49	294·55	265·52
10. Readymade garments . . .	514·97	595·83	527·50
11. Made up articles wholly or chiefly of cotton	88·34	104·10	97·01
12. Jute manufactures	329·95	257·51	202·76
13. Leather and leather manufactures (including footwear) . . .	377·20	405·54	371·78
14. Chemicals and allied products .	225·64	364·13	308·20
15. Gems and jewellery . . .	618·37	811·49	894·03
16. Carpets handmade	163·92	181·25	168·57
17. Engineering goods	815·01	938·87	N.A.
18. Crude oil	—	196·23	1,023·29
Total Exports (including other items) .	6,710·71	7,805·90	8,829·80

NOTE : 1982-83 figures are provisional.

On current indications, exports seemed to have done very well during 1983-84 in respect of gems and jewellery, readymade garments, tea, sugar, cashew kernels, spices, cotton raw, handmade carpets, crude oil and other mineral, fuel and lubricant products.

ems and wellery

The gems and jewellery exports now constitute a major growth sector in India's exports. Exports of these items are estimated to have reached Rs 1,324 crore during 1983-84 or approximately 14 per cent of country's total exports during the year. For the last few years, the world diamond trade has been faced with a recession which has had a greater impact on large sized diamonds than of small sized diamonds in the export of which India specialises. The demand from US and other consumer markets seems to be inclined in favour of Indian cut and polished diamonds. To feed the raw material requirements of this export oriented industry, certain facilities have been made available to the industry, in the matter of procurement of raw materials.

Most of the processing of rough semi precious stones in India is done at Jaipur and Cambay in addition to Tiruchirapalli.

Handicrafts

Indian handicrafts are becoming steadily popular in international market. Handicrafts constitute an important cottage industry of the country and provide employment to nearly 25 lakh artisans. A large number of handicraft artisans belong to weaker sections. Handicrafts comprise a wide range of artistic products. Woollen carpets and druggets, art metalware, hand printed textiles and scarves, woodwares, *jari,* ivory products, etc., are the principal items of handicrafts which are exported. Woollen carpets and druggets, however, occupy the most important position among the export items, accounting for almost 45-50 per cent of total exports of handicrafts from the country. Indian carpets had to face severe competition from countries like China, Pakistan, Korea and Taiwan in international market. A Carpet Export Promotion Council was set up in 1982 for exclusive promotion of carpet exports.

The Sixth Plan provides an allocation of Rs 56.40 crore for the development of handicrafts. The major programmes for development include (a) training in carpet weaving, art metal wares, cane and bamboo and hand printed textiles, (b) schemes for marketing assistance, (c) design, research and technical development, (d) exhibitions and publicity, (e) survey and studies and (f) export of handicrafts.

Textiles

The textile sector plays a very important role in India's national export effort. The items in this category cover a wide range of products. These include readymade garments, cotton textiles and made-ups, handloom products, silk, wool and woollen products, man-made textiles and coir and coir products. With a view to increasing exports of these items, Government have taken a number of steps.

A Central Advisory Council on Textile Industry was constituted on 29 November 1983 to advise the Government on matters of policy, programmes and measures for the orderly growth and development of the industry. The exports of textiles are subject to quantitative restrictions imposed by a number of industrial countries. This has restricted the scope for increase in exports. There has been extension of the Multi Fibre Agreement (MFA) on 22 December 1981 for a period of more than 4 years. It is expected to prove beneficial for developing countries including India, as some of the restrictive clauses have been removed and higher growth rates provided. India has already concluded textile agreements under the aegies of MFA with USA, European Economic Community, Canada, Australia and Finland for 4-year period with effect from 1 January 1983. In November 1983 a new bilateral textile agreement was concluded with Sweden which will ensure better access to the Swedish market.

PROJECT EXPORTS

From a modest beginning in 1973 project exports expanded rapidly in the aftermath of the oil boom when oil producing countries of West Asia embarked on massive developmental construction. Apart from providing a whole range of consultancy and technical services, Indian firms have attained a certain degree of competence in the fields of both civil construction and industrial turnkey projects. In order to sustain and import on fillip to project exports a separate export promotion council viz., Overseas Construction Council of India has been set up to deal with overseas construction and civil engineering projects.

IMPORTS

The principal imports with value from 1980-81 to 1982-83 have been given in table 20.3. The faster growth of Indian economy requires substantial imports of petroleum and petroleum products, fertilizers, iron and steel, non-ferrous metals, other industrial raw materials, specific type of machinery and capital goods, spares and components, etc.

TABLE 20·3
IMPORTS OF PRINCIPAL SELECTED COMMODITIES

(Value in Rs crore)

S. No. Items	1980-81	1981-82	1982-83[1]
1. Petroleum, petroleum products and related materials	5,263·47	5,189·26	5,604·96
2. Fertilizers (crude fertilizers)	79·06	82·56	55·51
3. Fertilizers-manufactured	652·30	509·71	145·64
4. Iron and steel	852·42	1,203·54	1,145·98
5. Non-ferrous metals	477·42	397·13	279·06
6. Paper, paper board and manufactures thereof	186·51	245·38	147·47
7. Vegetable oils (edible oil)	682·90	625·28	226·27
8. Chemicals-organic and inorganic	358·20	485·18	387·03
9. Machinery and transport equipment	1,820·75	1,980·65	2,231·79
10. Manufactures of metals	89·45	115·54	136·47
11. Cereal and cereal preparation	100·41	347·17	306·49
(a) Wheat	76·59	299·75	292·27
12. Pearls, precious and semi precious stones	416·75	397·38	677·43
13. Synthetic and regenerated fibre	96·53	173·18	124·73
14. Artificial resins plastic material, etc.	121·53	125·17	125·71
15. Non-metallic mineral manufactures excluding pearls, etc.	138·48	114·20	141·39
GRAND TOTAL (including other items)	12,560·29	13,607·56	14,355·76

1. 1982-83 figures are provisional.

In the wake of the steep increase in the world prices of petroleum and related products, the country's overall import bill went up substantially. The value of imports rose by 34.2 per cent and 37.3 per cent in 1979-80 and 1980-81 respectively; but the growth in imports during 1981-82, and 1982-83, decelerated to 8.4 per cent and 5.5 per cent respectively. The imports of pertoleum and petroleum products (gross) continued to be high at a level of Rs 5,604.96 crore during 1982-83 as against Rs 5,189.26 crore imported during 1981-82. The other items which recorded sizeable increases in the value of their imports during 1982-83 as compared to 1981-82 included machinery and transport equipment, pearls, precious and semi precious stones and non-metallic mineral manufactures. On the contrary, imports during 1982-83 registered a decline in the case of items such as fertilizers, edible oils, iron and steel, non-ferrous metals, paper and paper boards, chemicals and synthetic and regenerated fibre.

In recent years, the sharp escalation in the import bill on account of crude oil and petroleum products has widened the trade deficit and worsened the balance of payments situation. However, it is heartening to note that import substitution in the energy sector through the oil exploration programme is easing the pressure. The domestic production of crude oil doubled from a level of 105 lakh tonnes in 1980-81 to 211 lakh tonnes in 1982-83; and the production in 1983-84 was 260 lakh tonnes. As a result, the relative share of POL (Petroleum, oil and lubricants) in India's total imports declined from 42 per cent in 1980-81 to 39 per cent in 1982-83 and, on the basis of provisional data to about 30 per cent during 1983-84. The value of net POL imports declined from Rs 4,978 crore in 1981-82 to Rs 4,441 crore in 1982-83; and it is estimated to have declined to Rs 3,285 crore in 1983-84.

During 1983-84 imports have tended to show a significant increase particularly in respect of items *viz.* machinery and transport equipments; pearls, precious and semi-precious stones; chemicals/chemical material and products and non-ferrous metals, which are essential to sustain the growth in exports and industrial production. Larger imports of essential commodities like edible oils and foodgrains have also been necessary with a view to building buffer stock and combat the pressure on domestic prices in the interest of Indian consumers.

IRECTION OF OREIGN TRADE

India is having export and import trade flows with all the regions of the world, developing and developed. She is trying to develop her economic and trade relations with other countries through bilateral negotiations and various promotional activities.

The direction of India's exports and imports from different regions|sub-regions is outlined in table 20.4. In regard to exports, as given in the table 20.4, it should be mentioned that the total exports in respect of regions and sub-regions do not include exports of crude oil from India to respective countries of consignment, but these exports are included in the grand total of exports. While excluding crue oil from the grand total of exports it is observed that during 1982-83, East Europe accounting for 24.6 per cent of India's total exports, constituted the largest market for Indian goods, followed by the countries

TABLE 20·4
EXPORTS AND MPORTS OF NDIA'S FOREIGN TRADE

(Value Rs in crore)

Regions/Sub-regions	Exports[1]		Imports	
	1981-82	1982-83 (Provisional)	1981-82	1982-83 (Provisional)
I. WEST EUROPE .	1,650·77	1,694·72	3,516·49	3,679·29
(a) European Common Market countries .	1,409·16	1,475·10	3,059·08	3,244·91
(b) European Free Trade Area countries	179·54	162·99	310·09	287·09
(c) Other West Europe .	62·07	56·63	147·32	147·29
II. ASIA AND OCEANIA .	2,530·83	2,709·64	5,918·48	6,768·09
(a) ESCAP . . .	1,740·35	1,858·18	3,642·93	3,367·56
(b) Rest of Asia and Oceania . .	790·48	851·46	2,275·55	3,400·53
III. AFRICA . . .	433·16	409·73	455·16	197·30
IV. AMERICA . . .	1,009·99	1,030·04	2,210·58	1,886·05
(a) North America .	987·62	1,005·96	1,728·29	1,621·66
(b) South America .	8·81	9·09	454·55	246·28
(c) Other America .	13·56	14·99	27·74	18·11
V. EAST EUROPE .	1,974·92	1,907·15	1,506·85	1,825·03
Grand Total . .	7,805·90	8,829·80	13,607·56	14,355·76

1. Region-wise figures do not include exports of crude oil from Bombay High. These exports have, however, been taken into account in the grand total.

of Economic and Social Commission for Asia and Pacific (ESCAP) region at 24 per cent, European Common Market (ECM) at 19 per cent, North America at 13 per cent, rest of Asia and Oceania at 11 per cent, Africa at 5.3 per cent, European Free Trade Area (EFTA) at 2.11 per cent, rest of Europe at 0.7 per cent and South America at 0.1 per cent. However, in regard to imports, the largest imports during 1982-83 were from rest of Asia (mostly West Asia) with a share of 23.7 per cent of India's total imports, followed closely by ESCAP region with a share of 23.5 per cent and ECM countries with a share of 22.6 per cent. The respective shares of other regions/sub-regions in India's total imports during 1982-83 were East Europe 12.7 per cent, North America (USA and Canada) 11.3 per cent, EFTA countries 2 per cent, South America 1.7 per cent, Africa 1.4 per cent and other West Europe 1 per cent.

The Soviet Union, United States and Japan have been India's first three major trading partners. On provisional basis, India's total trade turn over with USSR during 1982-83 was of the order of Rs 3,072 crore comprising of exports Rs 1,558 crore and imports Rs 1,514 crore. During the same year, total trade with USA was valued at Rs 2,321 crore (exports Rs 950 crore and imports Rs 1,371 crore) and in the case of Japan trade turn over was Rs 1,865 crore (exports Rs 795 crore and imports Rs 1,070 crore). Besides these three major trading partners, the other important markets for Indian goods include UK, Federal Republic of Germany, Belgium, France, Italy and Netherlands among the ECM countries; Saudi Arabia, United Arab Emirates, Iraq, and Kuwait in the West Asia region; Iran, Singapore, Hong Kong and Australia in the ESCAP. Most of these countries are also important from the point of view of imports into India. Despite the fact that the earlier trend of rapid rise in trade deficit has been arrested after 1980-81; India still continue to have large trade deficit with the EEC, West Asia, the ESCAP countries and North America and this calls for further efforts to boost exports to these countries.

POLICY

The export-import policy of the country in recent years has increasingly been geared to be export-oriented and production-oriented. Several liberal provisions have been incorporated within the framework of the policy with regard to import of raw materials, components, capital goods and upgradation of technology with further simplification and streamlining of procedures. The import and export policy for 1984-85 has been formulated to improve export performance keeping in view the global economic environment and the needs of the domestic economy. The policy seeks to provide a further impetus to export production and exports, make all possible savings in imports, strengthen and develop the production base through continuous access to all necessary inputs including capital goods, facilitate technological upgradation and modernisation in production, assist the small scale sector in export production and to further simplify and streamline procedures.

EXPORT PROMOTION

Export promotion is a national task. In order to promote exports, the Government has initiated several institutional, infra-structural and fiscal measures. The objective of the Government is to promote exports to the maximum but in such a manner that the economy of the coun try is not affected by unregulated exports of items essentially needed within the country. Export control is, therefore, exercised in respec of a limited number of items whose supply position demands that their exports should be regulated in the largest interest of the country.

The Cash Compensatory Scheme (CCS) is an important instrument of export promotion. CCS is allowed on a selective basis primarily with the objective of compensating the exporters for the elements of unrefunded taxes and duties paid on the inputs required for the manufacture of goods exported. The Duty Drawback Scheme, in which exporters are allowed reimbursement of customs and central excise duties paid on raw material, components and packaging, material used in the manufacture of packaging of export products, has been further modified so as to facilitate quicker payments of duty drawback claims. In order to step up export production, large export houses and companies covered under FERA (Foreign Exchange Regulation Act) have been allowed to set up capacities outside the list of industries included in Appendix of the Industrial Policy of 2 February 1973. Several steps have been initiated to provide requisite transport facilities for exports. The Internal Container Depots (ICDs) have been set up at Bangalore, Coimbatore and Guntur. A specialised Export Import Bank (EXIM) has been set up to facilitate export finance. The Trade Development Authority and the Trade Fair Authority of India are engaged in exhibition of Indian products through organisations/participation in international fairs in different parts of the world.

In addition to the two existing Free Trade Zones (FTZs) at Kandla (Gujarat) and Santacruz (Bombay), four more free trade zones have been set up at Falta (West Bengal), NOIDA (Uttar Pradesh), Madras and Cochin. The total number of units working in Kandla Free Trade Zone (KFTZ) in 1983-84 was 93 as against 83 in 1982-83. Employment has increased from 6,500 workers during 1982-83 to 7,500 workers during 1983-84. The number of industrial units working in Santacruz Electronic Export Processing Zone (SEEPZ) has also gone up to 48 in 1983-84 from 45 units in 1982-83. The total exports from SEEPZ and KFTZ during 1983-84 were valued at Rs 88.62 crore and Rs 107.30 crore respectively.

The Government has also introduced a cent per cent export oriented scheme from 31 December 1980 in order to have the local advantage in production and all the facilities of a free trade zone. The response to the scheme is quite encouraging. As on 31 March 1984, 45 units have commenced production and exports effected by these units amounted to Rs 85 crore. It has been decided to permit these units to sell 25 per cent of their output in the domestic market against valid import licence.

AUTONOMOUS BODIES

There are a number of autonomous bodies under the Department of Commerce connected with the development of exports and export promotion activities.

There are five statutory Commodity Boards responsible for production, development and export of tea, coffee, rubber, cardamom and tobacco.

The Export Inspection Council, Calcutta, a statutory body is responsible for enforcement of quality control and compulsory preshipment of various exportable commodities.

The Indian Institute of Foreign Trade, New Delhi, a registered body is engaged in (i) training of personnel in modern techniques of international trade, (ii) organisation of research in problems of foreign trade and (iii) organisation of marketing research, area surveys, commodity surveys and market surveys.

The Indian Institute of Packaging, Bombay, set up in 1966 is also a registered body. The Institute undertakes research on raw-materials for the packaging industries, organises training programmes on packaging technologies and stimulates consciousness of the need for good packaging.

There are at present 20 export promotion councils—13 with the Department of Commerce and 7 with the Department of Textiles. These are registered as non-profit organisations, under the Companies Act. The Councils perform both advisory and executive functions. They secure the active co-operation of the growers, producers and exporters in the export efforts. These Councils are also registering authorities under the import policy for registered exporters.

The Federation of Indian Export Organisations, New Delhi, is an apex body of various export promotion organisations and institutions. It functions as a primary servicing agency to provide integrated assistance to the Government recognised export houses and as a central co-ordinating agency in respect of export promotional efforts in the field of consultancy services in the country.

The Indian Council of Arbitration, New Delhi, set up under the Societies Registration Act, promotes arbitration as a means of setting commercial disputes and popularises arbitration among the parties, particularly those engaged in international trade.

The primary objective of the Trade Development Authority, set up in July 1970 as a registered society with headquarters at New Delhi, is to induce and organise entrepreneurs, largely in the medium and small scale industries, to develop their individual export capabilities. It provides assistance in personalised form to individual exporters from the stage of intention to export through collection and collation of information product development, market research and analysis. It advises them on export finance and assist them in securing and implementing export orders.

The Marine Products Export Development Authority, Cochin, set up in August 1972 is responsible for development of marine products industry with special reference to exports.

The Central Advisory Council on Trade, consisting of representatives from different organisations and individuals with business standing and expertise in the field of commerce, advices the Government on matters relating to : (i) export-import policy programmes, (ii) operation of import and export trade controls, (iii) organisation and development of commercial services and (iv) organisation and expansion of export production.

ATTACHED AND SUBORDINATE OFFICES

The Import Export Trade Control Organisation headed by the Chief Controller of Imports and Exports is responsible for the execution of export and import policies of the Government. Import and export licences of iron and steel and ferro-alloys are also looked after by this organisation. The Chief Controller of Imports and Exports has subordinate offices located at Agartala, Ahmadabad, Amritsar, Bangalore, Bhopal, Bombay, Calcutta, Chandigarh, Cuttack, Cochin, Guwahati, Hyderabad, Jaipur, Kanpur, Madras, New Delhi, New Kandla, Panjim, Patna, Pondicherry, Rajkot, Shillong, Srinagar and Vishakhapatnam.

The Export Promotion Offices at Bombay, Calcutta, Madras, Cochin, Nagpur and Pune are also functioning under the administrative control of the regional Joint Chief Controller of Imports and Exports|Deputy Chief Controller of Imports and Exports.

The Directorate General of Commercial Intelligence and Statistics, Calcutta, is the primary agency for compilation and dissemination of statistical information and commercial intelligence. The Directorate brings out a number of publications and periodicals in commerce, statistics and allied fields. It conducts studies on various topics relating to promotion of trade. It also helps in the settlement of commercial disputes.

The office of the Development Commissioner is responsible for administration of the Kandla Free Trade Zone (KFTZ), Gandhidham, set up in 1965 for cent-per-cent export-oriented multi-product industrial units. The office of the Development Commissioner Santacruz Electronics Export Processing Zone (SEEPZ), Bombay, set up in 1973, is responsible for administration of the zone established for cent-per-cent export-oriented units manufacturing electronic equipments and components in the zone.

The enemy properties in India are being administered by the Custodian of Enemy Property, Bombay. The Custodian registers Indian claims against properties taken over by Pakistan and disburse ex-gratia grant to the Indian nationals|companies whose assets were seized by Pakistan during and after the Indo-Pak Conflict of September 1965. The office of the Custodian came into existence in 1939 in the wake of the Second World War and is entrusted with two-fold duties *viz.*, (i) custody, management and administration of the movable and immovable property in India and (ii) settlement of claims of Indian nationals whose properties were left in Pakistan.

COMMERCIAL RELATIONS AND TRADE AGREEMENTS

Continuous efforts are being made to foster India's economic and commercial relations with other countries. There are at present 68 commercial offices attached to Indian missions abroad including the Ambassador of India to GATT (General Agreement on Tariff and Trade) who is also Deputy Permanent Representative at UNCTAD (United Nations' Conference on Trade and Development) in the Permanent Mission of India, Geneva. These commercial offices/representatives function under the the budgetary control of the Ministry of Commerce and have a vital role to play in the promotion of India's trade and economic relations abroad. Apart from advising and assisting the head of the mission on all commercial and economic matters, commercial representatives also assist the Government in the formulation of its trade and economic policies through regular feed-back on market trends, trade promotion prospects and the general economic situation of the country in which they are accredited.

South Asian Region

The South Asian region includes India's neighbouring countries such as Afghanistan, Iran, Pakistan, Bangladesh, Nepal, Sri Lanka, Maldives and Bhutan. The balance of the trade with this region has continued to remain adverse largely on account of country's imports of petroleum products from Iran. Various delegations both from the private sector and at the official level are exchanged with a view to identifying areas of mutual interest and to removing constraints in the promotion of exports to these countries.

The trade between India and Afghanistan is conducted in freely convertible currencies in terms of a trade agreement signed on 24 June 1978. The trade between the two countries was reviewed in the Sixth Indo-Afghan Joint Commission in October 1983. The Afghan side agreed to increase imports from India, establish direct banking ties with Indian banks and to grant facilities for trade promotion tours for Indian agencies.

Trade with Iran is governed by the provisions of a trade agreement signed in 1974. It is, however, proposed to be replaced by a new agreement. Iran has become a promising market for Indian products with a sizeable potential. Iranian import agencies have evinced keen interest in importation from and collaboration with India for meeting its requirements of consumer goods, projects, light and heavy engineering items.

In the absence of a new trade agreement with Pakistan, trade between India and Pakistan is taking place in accordance with the export-import policy and prescribed procedures of the two countries. Whereas there are no restrictions on trade with Pakistan from India's side, Pakistan has placed unilateral restrictions on its private sector for trade between the two countries. The Indo-Pak Sub-Commission on Trade held two sessions in June 1983 and January 1984. It was reiterated that substantial increase in trade should take place between the two countries without encouraging large trade imbalances.

Trade with Bangladesh is conducted under the trade agreement of 1980 which provides for trade on most favoured nations (MFN) terms in freely convertible currencies and also for a review of the progress of trade at the intervals of six months. The agreement expired on 4 October 1983 and both the countries are taking necessary steps to renew the agreement soon for a further period of three years.

India's trade with Nepal is regulated by Indo-Nepal Treaties of Trade and Agreement for Co-operation to control unauthorised trade. It was signed in 1978. The treaties were valid till 24 March 1983. It has now been renewed for a further period of 5 years.

Trade with Sri Lanka is governed by a trade agreement signed in 1961. The agreement is of a general nature and provides that it shall remain in force until it is modified or terminated by either contracting party on giving three months notice to the other party.

A trade agreement between India and Maldives came into force on 31 March 1981. The agreement provides for special treatment of Maldives in the matter of annual supply of certain essential commodities. Such supplies will be co-ordinated by the State Trade Corporation of India on the basis of regular shipping line services from Cochin to Male.

The East Asia region comprises as many as 27 countries including 3 industrialised countries namely Japan, Australia and New Zealand. It is a growing market with ample investment opportunities.

India's exports to East Asia region during 1982-83 were valued at Rs 1,554 crore whereas imports valued Rs 2,402 crore. India had been consistently enjoying a favourable balance of trade with the region as a whole, until 1978-79. Thereafter the trade balance had become adverse due to bulk imports of palm oil, cement, fertilizers, coking coal, wheat, pig iron, steel structurals, wheels and axles, etc. As on 1 January 1984, the countries of this region with which India was having trade agreements were Japan, Australia, Peoples Democratic

Republic of Korea, Republic of Korea, Philippines, Thailand, Indonesia, Burma, Vietnam and Mongolia. Efforts are also being made to promote country's trade with Peoples Republic of China and other countries.

West Asia and North Africa

The West Asian and North African countries continue to occupy an important position in India's foreign trade, but it is not favourable to the country. As against exports worth Rs 968 crore during 1982-83, India's imports from the region were valued at Rs 2,236 crore with an adverse balance of Rs 1,258 crore. This region holds considerable promise for the growth of India's exports, particularly in engineering and other value-added items including gems and jewellery. This area is also an important source of supplies of some Indian requirements of industrial raw material mainly crude oil, fertilizers and rock phosphates.

There has been a significant success in securing project contracts particularly in Iraq and Libya. Consultancy contracts have also been entered into by a number of Indian consultancy firms in the various countries in this region.

India has trade agreements with 11 countries of this region. These are Arab Republic of Egypt, Algeria, Iraq, Jordan, Kuwait, Libya, Morocco, People's Democratic Republic of Yemen, Syria and Tunisia. India is also having joint commissions with some of these countries with a view to device measures for improving and diversifying trade flows with the countries of this region.

Africa (South of Sahara)

India has taken measures designed to increase trade, joint ventures and bilateral co-operation with African continent. These include a concerted drive to sign trade agreements with as many African countries as possible, strengthening of the commercial wings with a view to cope up with increasing commercial work, opening of offices of Engineering Export Promotion Council in Abidjan, Trade Development Authority in Liberia and Project Equipment Corporation in Harere in Zimbabwe. During 1982-83, India's exports to and imports from African counrties (South of Sahara) were valued at Rs 263 crore and Rs 139 crore respectively. The countries of this area with which India has trade agreements include Ethiopia, Ghana, Kenya, Liberia, Senegal, Uganda, Zimbabwe, Zambia, Nigeria, Cameroon. A technological plan has been prepared in consultation with National Research Development Corporation for selected African countries. The plan has been prepared in response to a feeling in most countries that the Indian technologies are most suited to their needs and environment.

East Europe

The East European region continues to hold a prominent place in India's foreign trade, accounting for about 24.6 per cent of India's total exports (excluding crude oil) and 12.7 per cent of total imports during 1982-83. India's exports to the East European region over the years, have also witnessed diversification with emphasis on non-traditional and manufactured products. The Soviet Union continued to be India's largest trading partner in 1982-83. India's total trade turnover with the Soviet Union increased from Rs 2,787.93 crore in 1981-82 to Rs 3,071.74 crore in 1982-83, registering a growth of about 10 per cent.

India has trade agreement with all the countries of East Europe. The trade protocol for 1984 with USSR anticipate the total trade turnover of about Rs 3,840 crore as against the 1983 trade protocol projection of Rs 3,626 crore. This represents a substantial growth of trade in 1984 over the targets set for 1983. Manufactured and non-traditional items account for more than 60 per cent of total exports from India to USSR. The variety and volume of commodities in the basket of exports from India is diverse and large. The items of exports from India for 1984, where substantial increases have been envisaged, cover products like printed cotton textiles, cotton hosiery, aluminium power cables, oil cakes, coffee, medicines and pharmaceuticals, woollen blankets, electronic instruments, etc. Imports from the Soviet Union largely consist of crude oil and petroleum products, fertilizers, DDT, non-ferrous metals, cement, newsprint, and machinery and equipments required for Soviet assisted projects in India. India has also signed annual trade protocols with other East European countries which include Poland, Czechoslovakia, German Democratic Republic and Romania. The projected trade turnover in 1984 with these countries envisages an increase of 8 per cent in India's export over 1983.

West Europe

West Europe is a very significant trading area for India's foreign trade, accounting for a share of about 22 per cent in India's total exports (excluding crude oil) and 26 per cent in import during 1982-83. It has two major economic groupings, namely, EEC (UK, Federal Republic of Germany, France, Italy, Belgium, the Netherlands, Luxemburg, Denmark, Ireland and Greece) and EFTA (Norway, Sweden, Finland, Austria, Switzerland and Portugal) besides some other countries like Spain, Turkey, Malta and Cyprus. One of the important features of country's exports to West Europe is that, on the basis of 1982-83 figure, about 88 per cent of India's total exports to the West European Region is accounted for by just seven countries namely UK, Federal Republic of Germany, the Netherlands, Italy, France, Belgium and Switzerland indicating that most of the West European markets are still relatively unexplored. The important items of export are textile fabrics and made-ups, garments, diamonds, leather and leather goods and agricultural products (tea, oil cakes, tobacco, coffee, spices, crude vegetable material and marine products) and imports are machinery of all kinds, transport equipment, iron and steel, fertilizers, chemicals and rough diamonds.

The India Trade Centre at Brussels is an important institution in West Europe responsible for India's export promotion. It continues to play an important role in helping to diversify exports besides providing market intelligence and information on matters like distribution channels, quality and packing requirements, fashion trends, changing designs, etc., for the exporters in India. There are other overseas offices of various export promotion organisations like Trade Development Authority, Engineering Export Promotion Council, State Trading Corporation located in the West European region, the latest addition being the TDA's Stockholm office which would cater to the Scandinavian countries.

India has trade agreements with most of the West European countries. The most important is the Indo-EEC Agreement for Commercial and Economic Co-operation. A new agreement with EEC (which replaced the old one signed in 1978) was signed in June 1981. The new agreement is for a duration of 5 years designed to promote closer trade and economic relations between the Community and India. It seeks to aid India in its trade promotional efforts through Indo-EEC

Trade Promotion Programme. Some of the activities covered by th programme are India's participation in trade fairs held in Europea countries, buyer-seller meets, visits of delegations, workshops i different export oriented industries in India and Europe and specialise training for Indians from different industries.

North America

The United States is one of the leading trade partners of India, with sizeable two-way trade. Major items of India's exports to USA ar crude petroleum, diamonds, readymade garments, cashew, marine pro ducts, leather and leather products, carpets and rugs, chemicals an allied products, jute fabrics, etc. Over the years, there has been signi ficant diversification and India now exports non-traditional items including manufactured items, with high value added content.

Canada is a growing market for Indian products, particularly non traditional items. The principal products of India's exports to Canad are textile and clothing, engineering goods, chemicals, leather an leather products, jute carpets and druggests, tea, precious stones, jewellery. spices, coffee, fruits and vegetables and handicrafts. feature of India's exports to Canada is that finished and semi-finishe products are gradually replacing the traditional raw materials.

South America

The South American region comprising of Latin American and Carr bean countries accounts for about six per cent of the country's worl trade. India continues to be an insignificant trading partner of thi region. The country has all along had an adverse balance of trad with this region. Argentina, Venezuela, Mexico, Brazil, Trinidad an Tobago, Antilles, Guyana, Peru and Uruguay have so far been India most important export markets in this region. Brazil, Mexico an Argentina have been important sources of supply. Sizeable imports vegetable oils and crude oils have been made in recent years fro Brazil and Mexico respectively. Balancing of trade with South Ame rican region has not yet been very easy because of distance, lack shipping and air cargo facilities. However, efforts are being made improve the situation.

JOINT VENTURES ABROAD

India has set up joint ventures abroad as a part of its overall strateg to increasingly participate in the development process of the thi world. At the end of December 1983 there were 235 joint ventu proposals out of which 154 joint ventures were in production/operati and 81 were under various stages of implementation. Among the 15 joint ventures that have become operational, 94 joint ventures are the manufacturing sector, maximum being in the field of light enginee ing followed by textiles. The other industries in which they have be set up include chemicals and pharmaceuticals, palm oil refining, ir and steel products, paper, glass, etc. In the non-manufacturing sect the largest number was for trading and marketing followed by hote and restaurants. Regionwise the larger number of joint ventures a located in the neighbouring countries of South and South East As (82) followed by Africa (26).

PUBLIC SECTOR AGENCIES

For increasing state participation in the country's export and imp trade a number of public sector agencies have been set up.

tate Trading Corporation

The State Trading Corporation of India (STC) was registered in 1956 under the Indian Companies Act. Its main objective is to enlarge the scope of India's exports and to arrange for India's essential imports. It also provides a number of services to the small scale sector to enable them to enter the export market. The STC has achieved a turnover of Rs 1,832.1 crore in 1982-83. This consisted of exports worth Rs 630.5 crore, imports worth Rs 1,188.2 crore and domestic sales worth Rs 13.4 crore.

The Project and Equipment Corporation (PEC), a subsidiary of STC, was created to give impetus to the export of engineering equipment and projects from India. It specialises in the export of railway rolling stock, heavy equipment and the execution of turn-key projects and identifies technological competence of manufactures of goods and of other agencies for services and ensuring the fulfilment of contractual obligations in respect of quality and delivery schedules.

Minerals and Metals Trading Corporation

The minerals and Metals Trading Corporation (MMTC) occupies a prominent place in India's foreign trade in minerals and metals.

The exports of MMTC comprise of iron ore, manganese ore, coal and chrome ore and the imports mainly of fertilizers, aluminium and stainless steel.

The Corporation has also been entrusted with the task of importing rough diamonds from producing countries and other markets for sale to Indian diamond exporters against their REP (Registered Exporters Policy) and advance imprest licences. The Corporation has also made a modest entry in the international market for cut and polished diamonds.

The Mica Trading Corporation of India (MITCO) was set up on 1 June 1974 and is the only subsidiary of the MMTC to look after the exports of processed mica including mica scrap and waste. More than 80 per cent of the purchase of mica by MITCO are made from economically weaker sections. To increase the exports of value-added mica products, instead of processed mica only, MITCO has taken up a number of projects such as mica capacitor unit, micronised mica power plant, mica paper units, mica paper and mica splittings insulated product.

Tea Trading Corporation of India

The Tea Trading Corporation of India (TTCI), was established in 1971 to create a stable export market for Indian tea, particularly in their valued added forms, namely, packaged tea, tea bags, instant tea, etc. Other activities of the Corporation include marketing of teas for domestic consumption, management of the tea gardens, warehousing of tea and establishment of other facilities beneficial to the tea industry.

xport Credit nd Guarantee orporation

The Export Credit and Guarantee Corporation Ltd. was originally set up in 1957 as Export Risk Insurance Corporation. Later on 15 January 1964, it was transformed into Export Credit and Guarantee Corporation Ltd. The primary objective of the Corporation is to promote exports from India by providing export credit insurances and guarantee facilities to Indian exporters and commercial bankers.

rade Fair uthority of India

In order to give a new orientation to country's state policy through fairs and exhibitions, the Trade Fair Authority of India (TFAI) has been set up as a Government company under the Companies Act, 1956. It took over the functions of the erstwhile Directorate of Exhibitions and Commercial Publicity, Trade Fair Organisation and th Indian Council of Trade Fair Exhibitions. The Authority starte functioning in March 1977. The main functions of the TFAI are th participation in international trade fairs, holding exclusive Indian exhibitions abroad, organisation of exhibitions, fairs and specialised display in India, provision of assistance to Indian parties for direct participatio in international fairs, organisation of commercial publicity throug mass media, etc.

The India International Trade Fair was held in November 1983 i New Delhi. Thirty seven countries (in whose Pavilion, 279 foreig companies were represented) participated at national level, besides 1 foreign companies participated directly.

INTERNAL TRADE

The internal trade of India is many times larger than its external trade owing to the vastness of the country, its varied climate and divers natural resources. It can be classified under five broad heads : (i) rail-borne trade, (ii) river-borne trade, (iii) coasting trade, (iv trade borne on other craft, and (v) trade by air. Complete an precise data about internal trade are not possible as reliable statistic pertaining to items (iv) and (v) are not available.

RAIL-AND-RIVER BORNE TRADE

Statistics of rail-and-river-borne trade are recorded on exports basi since April 1965. For the purpose of these statistics, India is divide into a number of trade blocks, roughly representing the states of th Indian Union. The chief port towns of Bombay, Calcutta, Cochi and Madras are constituted as separate trade blocks. The less important ports are grouped as other ports, each treated as separate trad block. The number of trade blocks since April 1977 is 38.

The data recorded in respect of 78 selected principal commoditie relate only to quantity, as value figures are not available on railwa and inland steamer invoices. The quantities are expressed in gros weight instead of net weight with effect from 1978-79. In case o river service the trade carried by only one steamer company amon three trade blocks were recorded from April 1960 to August 1965 The company suspended its river service from September 1965. Since then a new steamer service has been introduced and the river-borne trade carried by Inland Water Transport Corporation Ltd. Calcutta between two trade blocks *viz.* Assam and Calcutta ar being recorded.

COASTING TRADE

Coasting trade is recorded under two broad heads—(i) internal trade i.e., trade amongst the ports within the same maritime block, an (ii) external trade, i.e, trade between one maritime block on the on hand and all other maritime blocks on the other.

21 TRANSPORT

RAILWAYS

The Indian Railways are the nation's lifeline and the principal mode of transport in the country. From a modest beginning in April 1853, when the first railway train steamed off from Bombay to Thana, a stretch of 34 km, the Indian railways, with a route kilometrage of 61,385 (as on 31 March 1983), have now grown into Asia's largest and the world's fourth largest railway system. It is also the biggest public undertaking in the country.

Indian railways had total assets of Rs 8,882.2 crore on 31 March 1983 and a staff strength of over 15·8 lakh regular employees. During 1982-83 they carried 365.54 crore passengers and 256 crore tonnes of freight traffic. Indian railways run about 11,000 trains every day, connecting 7,068 stations. The Indian railways operate on three gauges—board gauge, metre gauge and narrow gauge. The operational fleet consisted of 10,087 locomotives, 37,539 coaching vehicles and 3,83,429 wagons.

The progress of the government railways for selected years since 1950-51 has been given in tables 21.1 and 21.2.

TABLE 21.1
PROGRESS OF RAILWAYS

	Route length (Kilometre)			Running track (Km)	Passengers originating (lakh)	Goods Originating (lakh tonne)
	Electrified	Non-Electrified	Total			
1950-51 .	388	53,208	53,596	59,315	12,840	930
1960-61 .	748	55,499	56,247	63,602	15,940	1,562
1965-66 .	2,423	55,976	58,399	68,375	20,820	2,030
1970-71 .	3,706	56,084	59,790	71,669	24,311	1,965
1975-76 .	4,659	55,557	60,216	74,255	29,452	2,233
1980-81 .	5,345	55,895	61,240	75,860	36,125	2,200
1981-82 .	5,473	55,757	61,230	75,964	37,044	2,458
1982-83 .	5,815	55,570	61,385	76,197	36,554	2,560

MODERNISATION OF RAILWAYS

Tables 21.1 and 21.2 also show the trend towards modernisation railways. The electrified route length has increased more than times since 1950-51. Steam locomotives, production of which discontinued from 1972, are being gradually replaced by elec and diesel locomotives.

Since the beginning of the five year plans in 1950-51, the num of diesel locomotives has gone up by more than 155 times, fro mere 17 in 1951 to 2,638 in 1982-83 and of electric locomotives more than sixteen times *i.e.* from 72 to 1,157. Diesel and elec locomotives together carried 94.6 per cent of the total goods tra in terms of gross tonne km in 1982-83. Modernisation and impro ment of signalling and telecommunications have also made much he way. In 1982-83, a multi-channel microwave link was in operat for 13,725 km. Automatic signalling was provided on 1,504 track.

TABLE 21.2
Rolling Stock

Year		Number of locomotives				Number of coaching vehicles[1]	Num of wago
		Steam	Diesel	Electric	Total		
1950-51	.	8,120	17	72	8,209	19,628	2,05,
1960-61	.	10,312	181	131	10,624	28,439	3,07,9
1965-66	.	10,613	727	403	11,743	32,922	3,70,
1970-71	.	9,387	1,169	602	11,158	35,145	3,83,9
1975-76	.	8,496	1,803	796	11,095	36,821	3,95,2
1980-81	.	7,469	2,403	1,036	10,908	38,327	4,00,9
1981-82	.	7,245	2,520	1,104	10,869	37,960	3,92,
1982-83	.	6,292	2,638	1,157	10,087	37,539	3,83,4

1. Includes Electric Multiple Units (EMU).

Indian railways have made remarkable progress in attaining s sufficiency in equipment and stores. At the beginning of the of planned development in 1950-51, Indian railways were impor about 23 per cent of their equipment and stores. Such imports w reduced to 8.7 per cent in 1982-83.

There has also been a progressive increase in expenditure development of railways under the five year plans. It was Rs 422 crore, Rs 1,043.70 crore, Rs 1,685.84 crore, Rs 1,420.88 crore Rs 1,491.93 crore in the First, Second, Third, Fourth and Fifth P respectively.

Manufacture of Rolling Stock

Railway locomotives are built in the Chittaranjan Locomotive Wo (CLW), Chittaranjan, and the Diesel Locomotive Works (DL Varanasi both of which are administered by the Ministry of Railw

CLW produced its first engine in 1950-51 and achieved a prod tion level of 173 locomotives per year during 1959-60. In Decem 1971, it produced its last steam engine, taking its total productio 2,351 units before it switched over to the manufacture of main electric and diesel hydraulic shunting locomotives. During same period, most of the metre gauge steam engines were built TELCO, a private sector firm.

CLW turned out its first DC electric loco in 1961-62 and the diesel-hydraulic shunter in 1967-68. Overall production till Ma 1983 totalled 931 electric locos, 450 diesel-hydraulic shunters 55 narrow gauge diesel-hydraulic locos. This included 4WA electric locos fitted with two stage suspension flexi-coil bogies having a speed potential of 130 km/hr and 4 medium hp diesel electric shunters (WDS-8) for steel plants.

Diesel electric main line locos as also heavy duty shunters are built by DLW. This unit commenced production of broad gauge locomotives in 1963-64 and from 1968-69 it also started manufacturing metre gauge locomotives. No diesel electric locos have been imported since then. Upto March 1983 this unit had delivered 1,733 locomotives of various types.

The bulk of the passenger service vehicles are manufactured in the Integral Coach Factory (ICF), Perambur, which is also administered by the Ministry of Railways. ICF's production is supplemented by two public sector undertakings - Bharat Earth Movers Ltd., and Jessops. These three together meet the entire requirements of the railways.

Since ICF commenced production of passenger coaches in 1955-56, it had turned out 14,185 passenger service vehicles (fully furnished coaches) till March 1983. The passenger service vehicles produced by ICF and Jessops include EMUs. The electrical equipment for these are manufactured by another public sector unit—Bharat Heavy Electricals Ltd.

The railways' requirement of wagons is met mostly by the industry which includes units both in the public sector and private sector. Three railway repair workshops supplement the production of these units. In 1982-83, production totalled 14,088 wagons in terms of 4-wheelers, of which 13,045 were turned out by the industry.

Railways' requirements of wheels and axles are at present met only in part by indigenous production and the rest are being procured from foreign manufacturers. In order to prevent heavy drain on foreign exchange, the railways are setting up a wheel and axle plant at Yelahanka, Bangalore. This plant will produce approximately 70,000 wheels and 23,000 axles per year.

PASSENGER TRAFFIC AND AMENITIES

The passenger traffic was over 36.5 crore in 1982-83 as against 12.8 crore in 1950-51. The earnings from the second class passengers were Rs 1,028 crore in 1982-83 as compared to Rs 84.47 crore in 1950-51.

The average rate charged per passenger for every kilometre was 4.13 paise (ordinary) and 6.12 paise (mail/express) for second class, 21.1 paise for first class and 46.3 paise for air-conditioned class.

There have been consistent efforts on the part of the Railway Administration to bring about qualitative improvement in the level of comfort, particularly for passengers travelling in second class who constitute over 97 per cent of the total passenger traffic. Steps taken to improve the travel conditions of second class passengers include providing cushioned berths/seats in second class coaches, augmentation of the sleeper accommodation on mail and express trains, improving the reservation system, throwing open of the refreshment/pantry cars for use of second class passengers, sale of janata meals and provision of clean environment. With a view to eliminating overcrowding in reserved coaches, travelling ticket examiners and coach attendants were provided in second class sleeper coaches/air-conditioned two tier coaches|full corridor type first class coaches.

The task of providing improved amenities is a continuous process. One hundred and twentyone more water coolers were provided during the year; raising the total number of coolers to 3,295. Out of 7,068 stations, 5,794 have been electrified. Catering facilities have been provided at 3,253 stations and on 88 pairs of trains.

GOODS TRAFFIC

The railways carried about 25.6 crore tonnes of goods in 1982-83 as compared to 9.3 crore tonnes in 1950-51. The freight revenue was Rs 2,865.9 crore in 1982-83. To speed up movement of freight, many fast goods trains have been introduced on important routes.

To provide door-to-door service, a container service is also operated. The containers are carried on guaranteed schedules by fast goods trains. A freight forwarder scheme for movement of goods in wagons was in operation on 66 routes during 1982-83. A total number of 21,820 wagons were loaded in this scheme during the year.

ADMINISTRATION

The responsibility for the administration and management of government railways vests in the Railway Board under the overall supervision of a Cabinet Minister. The Board consists of a Chairman, who is ex-officio Principal Secretary to the Government in the Ministry of Railways, a Financial Commissioner and three other members, who are all ex-officio Secretaries to Government in the Ministry of Railways.

Railway Zones

The Railways are divided into nine zones, each headed by a General Manager, who is responsible to the Railway Board for operation, maintenance and financial matters.

The nine zones, with their headquarters and the route kilometeres in brackets, are : Central (Bombay VT; 6,371), Eastern (Calcutta; 4,238), Northern (New Delhi; 10,975), North-Eastern (Gorakhpur; 5,163), North-East Frontier (Maligaon-Guwahati; 3,580), Southern (Madras; 6,701), South Central (Secunderabad; 7,023), South-Eastern (Calcutta : 7,041) and Western (Bombay-Churchgate : 10,293).

Co-operation between the public and the railway administration is secured through various committees including National Railway Users' Consultative Committee, Zonal Railway Users' Consultative Committees and Divisional Railway Users' Consultative Committees.

RAILWAY FINANCES

Since 1924-25, railway finances remain separated from general revenues. They have their own funds and accounts and the railway budget is presented separately to Parliament. However, the railways contribute to the general revenues a dividend on the capital invested. The quantum of contribution is reviewed periodically by a Parliamentary Convention Committee. So far six such Committees have been appointed. The rates of dividend payable for the period 1980-84 are 6 per cent on capital invested on Railways upto 31 March 1980 and 6.5 per cent on capital invested from 1 April 1980.

STAFF WELFARE

Several schemes are in operation for the welfare of the railway employees who numbered 17.9 lakh (15.8 lakh regular and 2.1 lakh casual) in 1982-83 as against 9.1 lakh in 1950-51. Among the important amenities are the provision of housing and medical facilities, holiday homes at hill stations and schools and hostels. Between 1951 and 1983 (31 March), about 5.87 lakh residential units, 106 hospitals and 595 health centres were maintained for the staff. The number of holiday homes at hill stations and other places was 33.

RESEARCH AND TRAINING

The Reasearch, Design and Standards Organisation (RDSO) was set up in 1957 for achieving self-sufficiency in the designing and manufacturing of railway equipment. The RDSO was formed by the merger of the Central Standards Office and the Railway Testing and Research Centre and has its headquarters at Lucknow. Over the years, the RDSO has helped the railways in indigenisation in all fields of railway operations and has also made it possible for them to export a number of items of railway equipment.

The railways have four major training institutions. These are Railway Staff College, Vadodara; Indian Railways Institute of Advanced Track Technology, Pune; Indian Railways Institute of Signal Engineering and Telecommunications, Secunderabad; and Indian Railway Institute of Mechanical and Electrical Engineering, Jamalpur. These institutes also train foreign officials.

CONSULTANCY SERVICES

The Indian railways have two organisations in the public sector engaged in providing high level consultancy services on rail technology and execution of railway projects. These are - the Rail India Technical and Economic Services (RITES) and the Indian Railways Construction Company (IRCON).

SHIPPIN

India has the largest merchant shipping fleet among the developing countries, and ranks sixteenth in the world in shipping tonnage.

As compared to 1.92 lakh GRT (gross registered tonnage) at the time of Independence, the country's operation tonnage on 31 March 1983 was 60.05 lakh GRT. Public sector undertakings of the Central Government owned 32.29 lakh GRT *i.e.,* 53.77 per cent on the total GRT.

Shipping Bodies

The National Shipping Board is a statutory body set up under the Merchant Shipping Act, 1958 to advise the Government on shipping matters. The All India Shipping Council is concerned with negotiation on freight and shipping problems with shipping companies and conferences. The Indian National Shipowners Association promotes the interests of national shipping, ship-building and other allied industries.

Shipping Companies

There are 70 shipping companies in the country of which 17 are engaged exclusively in the coastal trade, 45 in overseas trade and the remaining 8 both in coastal and overseas trade. The Government shipping companies *viz.* Shipping Corporation of India (SCI) and the Mogul Line Ltd. carry on both the coastal and overseas trade.

The SCI, which is one of the biggest shipping lines of the world, had a merchant fleet of 143 vessels with 30.05 lakh GRT at the end of 1982-83 and operated on almost all the important maritime routes. During 1982-83 the SCI had gross earnings of Rs 578.96 crore. The tonnage of SCI accounts for about 50 per cent of the total Indian tonnage.

The Mogul Line Ltd. mainly carries Haj pilgrims from Bombay to Jiddah (Saudi Arabia) and back. It operates passenger vessels on the Konkan coast and liner service to Red Sea and West Asia Gulf ports. Its fleet consists of 18 vessels with the total 2.24 lakh GRT.

The major private sector shipping companies which own one lakh or more GRT are the Scindia Steam Navigation Company Ltd. (5.42 lakh GRT), Great Eastern Shipping Company Ltd. (4.23 lakh GRT), India Steamship Company Ltd. (2.02 lakh GRT), South India Shipping Corporation Ltd. (1.51 lakh GRT), Camoder Bulk Carriers Ltd. (1.38 lakh GRT), Chowgule Steamships Ltd. (1.60 lakh GRT), Dempo Steamships Ltd. (1.48 lakh GRT) and Ratuaban Shipping Company Ltd. (1.38 lakh GRT).

Almost all the coastal trade is carried by national vessels. With the progressive normalisation of relations with Pakistan and China, trade with these countries has been resumed and Indian ships have started calling at their ports. India has ratified the UN convention on Code of Conduct for Liner Conferences, which was signed by India on 14 February 1978.

Training Institutions

There are six training establishments for merchant navy officers and ratings. *T. S. Rajendra* at Bombay imparts pre-sea training to navigation cadets. The Lal Bahadur Shastri Nautical and Engineering College, Bombay conducts post-sea instrumental courses in navigation and engineering. The Directorate of Marine Engineering Training at Bombay and Calcutta imparts training to marine engineering cadets. *Bhadra* at Calcutta, *Mekhala* at Vishakhapatnam and *Navlakshi* at Navlakshi provide pre-sea training for deck and engineering ratings and *bhandaries*. Training in three rating institutions has been stopped for the time being following prevailing unemployment amongst the seamen.

Indian Register of Shipping

India's national classification society came into being in March 1975 (i) to provide a faithful and accurate classification and record of mercantile shipping classed with IRS, (ii) to establish and administer standards for the construction and periodical surveys of ships and other marine structures, (iii) to approve designs of, to survey and to issue reports on land-based installations, machines, materials and apparatus of all kinds and (iv) to aid and develop the merchant marine of India.

From a humble beginning IRS had 295 ships in its class aggregating 31.1 lakh GRT comprising 173 dual class and 122 single class vessels as on 30 April 1984. Ninety-nine vessels are being built under its single classification and 86 under dual classification. IRS has entered into agreements of mutual co-operation with various international classification societies for technical back-up for varied services and also to carry out surveys anywhere in the world. It has been appointed by the Government as one of the assigning authorities for Load Line. It is also authorised to carry out cargo ship safety construction surveys.

IRS is actively engaged in inspection and certification of land-based plants, equipments and components as per the purchaser's specification.

IRS is also involved in offshore activities including inspection of drill ships, offshore supply vessels, platforms, pipelines, etc., on behalf of ONGC.

SHIP-BUILDING

India has four major ship-building yards, *viz.* Cochin Shipyard at Cochin, Hindustan Shipyard at Vishakhapatnam, Garden Reach Ship Builders and Engineers at Calcutta and Mazagon Dock at Bombay. All these shipyards are in the public sector.

There are at present 15 major repair dry docks—five at Bombay, six at Calcutta, two at Vishakhapatnam and two at Cochin. Although most of these dry docks can accommodate ships of only less than 10,000 DWT, one dock at Bombay can take ships upto 20,000 DWT and one at Hindustan Shipyard at Vishakhapatnam, bulk carries, upto 70,000 DWT and another at Cochin upto one lakh DWT.

Hindustan Shipyard

The Hindustan Shipyard has built 81 ships since 1947. Its present annual production capacity is about 3 ships of 21,500 DWT. Apart from a dry dock, which is in operation since 1971, the wet basin project has been partially commissioned for ship repair work.

A development and modernisation programme (stage II develpoment) at the revised estimated cost of Rs 66 crore was taken up for execution during 1982. On completion by 1985, the programme is expected to augment the capacity of the shipyard to 6|7 ships of 21,500 DWT each per year.

Cochin Shipyard

The Cochin Shipyard set up with the Japanese collaboration is designed to have a dock for building ships upto 85,000 DWT and a repair dock to accommodate ships upto one lakh DWT. The first vessel of 75,000 DWT built at the shipyard for the Shipping Corporation of India was delivered on 24 August 1981 and the second vessel of the same size (75,000 DWT) was delivered to Ratnakar Shipping Company, Calcutta on 16 October 1983.

NAVIGATIONAL AIDS

The Government looks after the general navigational aids, while the states, port trusts and other agencies are responsible for the local aids. However, under the Lighthouse Act, 1927 the Government exercise general control over all aids through the Department of Lighthouses and Lightships. The Department maintains various navigational aids along the coast of India besides launches and VHF wireless sets. There are, among others, 147 lighthouses, 12 lightbuoys, 13 fog signals, 14 radio beacons, 12 decca navigator chain stations, one light vessel, 6 recons and 21 VHF|RT sets.

INLAND WATERWAYS

India has about 5,200 km of major rivers, which are navigable by mechanised craft, but only 1,700 km are actually utilised. As regards canals, the available length is 4,300 km but only a length of 485 km is suitable for mechanised craft, of which only 331 km are being actually utilised.

Important among the navigable rivers are Ganga and the Brahmaputra and their tributaries; the Godavari, the Krishna, the Mahanadi, the Narmada and the Tapi and their canals; the backwaters and canals of Kerala; the Buckhingham canal in Andhra Pradesh and Tamil Nadu, the Cumbarjua canal and Mandovi and Zuvari rivers in Goa and the network of tidal rivers in Sunderbans.

Inland water transport is a state subject. The development schemes are mostly taken up by the states as Centrally sponsored schemes.

In the Sixth Plan, provision of Rs 45 crore has been made for development of inland water transport.

Inland Water Transport Bodies

The Central Inland Water Transport Board, New Delhi, formulates policy for the development of inland water transport in the country.

The Inland Water Transport Directorate of the Ministry of Shipping and Transport is responsible for the development of inland waterways. It gives technical advise to the states also. The Directorate has a regional office at Patna engaged in hydrographic surveys and marking navigable channels of the rivers. A sub-office of this regional office is working at Guwahati since 31 March 1984.

The National Waterways (Allahabad-Haldia stretch of Ganga-Bhagirathi-Hooghly Rivers System) Act, 1982 provides that it shall be the responsibility of the Central Government to regulate and develop this waterway and to secure the efficient utilisation of this waterway for shipping and navigation. River services in the Haldia-Farakka stretch have already been introduced. Further extention of service up stream of Farakka is possible when navigation lock at Farakka is commissioned.

Inland Waterways Authority of India

A proposal to set up Inland Waterways Authority of India for development, maintenance and management of waterways as recommended by national transport policy committee is under consideration.

The Central Inland Water Transport Corporation, a Government undertaking set up in 1967 at Calcutta, operates the river services carrying goods between Calcutta and Assam *viz.* Bangladesh. It is also operating river services between Calcutta and Farakka, and Calcutta and Cachar. Its other activities include ship-building and ship-repairing.

PORTS

There are 10 major and 139 minor working ports (out of a total of 226 minor ports in all) scattered along the coastline of about 6,000 km on the east and west. Major ports are the direct responsibility of the Government while minor ports figure in the concurrent list in the Constitution and are managed and administered by the respective state governments.

MAJOR PORTS

The major ports on the west coast of India are Kandla, Bombay, Mormugao, New Mangalore and Cochin. A new major port project at Nhava Sheva, sanctioned in June 1982 for Rs 592 crore, is expected to be operational by end 1987. On the east coast are Tuticorin, Madras, Vishakhapatnam, Paradip and Calcutta-Haldia. Major ports are statutory bodies administered in accordance with the provisions of the Major Port Trust Act, 1963. Each major port has a Board of Trustees representing various interests connected with port operations and the shipping industry.

Among the major ports, Bombay is the biggest. It is a natural harbour. It handles about one-fifth of the total traffic of the ports, bulk of which consists of petroleum products and dry cargo. Kandla is a tidal port, having a free trade zone. It handles traffic consisting of mainly petroleum products and fertilizers. Of late, foodgrains, cotton, cement and edible oils are also being handled. Mormugao enjoys the second position by value of the total tonnage of traffic, bulk of which is export of iron ore. Facilities for export of Kudremukh iron ore have been developed at New Mangalore. The other traffic handled at this port is fertilizers and petroleum products, granite stones and dry cargo. Cochin is a natural harbour. The traffic handled at this port comprises fertilizer raw materials, petroleum products, etc., and general cargo. Tuticorin handles mainly salt, coal, oil and dry cargo.

Madras is one of the oldest ports on the east coast. It handles the largest volume of traffic in general cargo next only to Bombay and Calcutta including Haldia. The traffic handled at this port consists mainly of petroleum products, iron ore and dry cargo. Vishakhapatnam is the deepest land-locked and protected port where an outer harbour has been developed for exporting iron ore to Japan. The other traffic handled at this port consists of oil, coal, and dry cargo. Paradip handles iron ore and some quantities of coal and dry cargo. Calcutta is a riverine port handling diversified commodities. A new mechanised dock system at Haldia with provision for deep draft vessels down stream of Calcutta supplements the facilities already available at Calcutta. Haldia has a fully equipped containerised berth. The traffic handled at this port consists of coal, petroleum products and dry cargo.

A sum of Rs 521 crore was provided in the Sixth Plan for development of the major ports (excluding Nhava Sheva). The emphasis in the Plan has been on modernisation of existing port facilities and augmenting port capacities to meet the expanding needs of the country. As a result of completion of general cargo berths at Madras, Tuticorin and New Mangalore, oil jetty at Cochin, full-fledged container berth at Madras, coal jetty at Tuticorin and improvements to Iron-ore Handling Plant at Paradip and facilities for handling iron ore at New Mangalore, port capacities have been augmented by 1.35 crore tonnes during Sixth Plan period till March 1984. At present the total capacity of the port is 11.48 crore tonnes as against 10.13 crore tonnes at the commencement of the Sixth Plan.

With a view to facilitate handling of containers, full-fledged container terminal at Madras has already become operational from 18 December 1983 equipped with specialised container equipment of 2 quayside gantry cranes and 2 transfer cranes. At Bombay, 3 transfer cranes have already been installed and 2 quayside gantry cranes are under installation. For Cochin, work is in progress for developing container facilities which include, *inter alia*, provision for 2 transfer cranes and 2 top-lift trucks.

MINOR AND INTERMEDIATE PORTS

Development and management of minor ports is the responsibility of the state governments. The Government provides technical advice to state governments, if asked for.

Allocation for the development of minor ports are in the plans of the respective maritime states. However, the development of ports in Andaman and Nicobar Islands and Lakshadweep is the responsibility of the Government.

DREDGING CORPORATION OF INDIA

The Dredging Corporation of India was set up in March 1976 to undertake capital and maintenance dredging at the ports in an integrated manner. The Corporation has a fleet of 9 dredgers and other ancillary craft. The total turnover of the Corporation for 1982-83 was the highest so far namely Rs 37.07 crore representing 15 per cent increase over that of 1981-82.

ROADS

The Indian road network is one of the largest in the world. The total road length comprising national highways, state highways and other state PWD roads was 5,54,478 km in 1980-81. The road development programme envisaged under the Sixth Plan lays emphasis on a co-ordinated and balanced development of road network in the country under (i) primary roads comprising national highways, (ii) secondary and feeder road system covering state highways and major district roads and (iii) rural roads including village roads and other district roads. Substantial outlays are proposed for road development in the rural and the tribal areas.

Plan Expenditure

In the first three Plans and the three Annual Plans, a sum of Rs 1,134.86 crore was spent on road development. The Fourth Plan and Fifth Plan expenditure was Rs 826.94 crore and Rs 1,348 crore respectively. The outlay for road development under the Sixth Plan for central sector is Rs 830 crore and for state sector Rs 2,609 crore.

National Highways

The Government is directly responsible for the national highways system. In 1947, approximately 2,500 km of missing road links and thousands of culverts and bridges, which did not exist, were required to be constructed to have an integrated and continuous network. There was an increase in the missing road links owing to the addition of new roads to the national highways system in later years. Upto 31 March 1983 road links including diversions constructed totalled 4,494 km, improvement to low grade sections completed in 22,959 km, widening and strengthening single lane sections to double lane carriageway done in 21,848 km and 388 major bridges constructed. The present national highways system includes a total road length of 31,398 km. An outlay of Rs 660 crore has been provided in the Sixth Plan for the development of national highways.

State Sector Roads

State highways and district and rural roads are the responsibility of state governments and are maintained by various agencies in the states and union territories. Roads are being developed in rural areas under the minimum needs programme the objective being to link all village with a population of 1,500 and above and 50 per cent of the villages with a population of 1,000-1,500 with all-weather roads by 1990.

The Government also assists in the development of certain selected roads in the states.

Border Roads

The Border Roads Development Board was set up in March 1960, for accelerating economic development and strengthening defence preparedness through rapid and co-ordinated improvement of road communication in the north and north-eastern border areas. The development activities now encompass in Rajasthan, Jammu and Kashmir, Himachal Pradesh, Uttar Pradesh, Madhya Pradesh, Sikkim, Assam, Meghalaya, Nagaland, Tripura, Manipur, Bihar, Andaman and Nicobar Islands, Arunachal Pradesh, Mizoram and also Bhutan.

Border Roads Organisation (BRO) executes its works departmentally (unlike MES, CPWD, etc., who execute works through contracts. The BRO is the largest single departmental undertaking for construction of roads. It is a self-sufficient force, mechanised and mobile, and during national emergencies provides engineering support to the Army.

Length of Roads

The total length of national highways, state highways and other state PWD roads in India was 5,54,478 km (both surfaced and unsurfaced roads) in 1980-81. Statewise break-up of length of roads is given in table 21.3.

TABLE 21.3
LENGTH OF ROADS IN INDIA

(In Km)

State/Union Territory	Surfaced Roads	Unsurfaced Roads	Total
1. Andhra Pradesh	36,266	3,576	39,842
2. Assam	6,283	18,393	24,676
3. Bihar	16,720	811	17,531
4. Gujarat	12,206	647	12,853
5. Haryana	18,260	2,259	20,519
6. Himachal Pradesh	3,931	12,965	16,896
7. Jammu and Kashmir	6,115	2,667	8,782
8. Karnataka	50,532	14,096	64,628
9. Kerala	15,653	2,349	18,002
10. Madhya Pradesh	48,429	14,955	63,384
11. Maharashtra	27,881	5,277	33,158
12. Manipur	1,865	1,699	3,564
13. Meghalaya	2,557	1,876	4,433
14. Nagaland	681	3,802	4,483
15. Orissa	12,832	5,155	17,987
16. Punjab	32,459	—	32,459
17. Rajasthan	30,511	10,311	40,822
18. Sikkim	993	—	993
19. Tamil Nadu	35,512	315	35,827
20. Tripura	1,117	3,186	4,303
21. Uttar Pradesh	47,796	13,019	60,815
22. West Bengal	15,351	1,671	17,022
23. Andaman and Nicobar Islands	591	34	625
24. Arunachal Pradesh	2,032	3,031	5,063
25. Chandigarh	14	—	14
26. Dadra and Nagar Haveli	184	34	218
27. Delhi	297	—	297
28. Goa, Daman and Diu	2,139	1,550	3,689
29. Lakshadweep	—	—	—
30. Mizoram	248	876	1,124
31. Pondicherry	459	10	469
Total	4,29,914	1,24,564	5,54,478

NATIONALISATION OF ROAD TRANSPORT

Most of the states and union territories have nationalised passenger transport in varying degrees. In the country as a whole, 60 per cent (estimated) buses were being run by the public sector undertakings as on 31 March 1983. Statutory corporations have been set up under the Road Transport Corporation Act, 1950 in several states. In other states, the nationalised services are operated by departmental o municipal corporations or registered companies. In most of the bi cities, bus services are state owned. Goods transport is almost exclusively in the private sector.

National Permits Scheme

For removal of constraints on the movement of goods by road transport, a scheme of national permits for public carriers was introduce in 1975. Under the scheme, the Government has specified the numbe of national permits each state|union territory can issue. The maximu number of permits to be issued initially was fixed at 5,300 which wa raised to 8,300 in 1979, 16,600 in 1980 and now to 24,900. So fa about 17,800 national permits have been issued.

Zonal Permit Scheme

For the implementation of the zonal permit schemes, reciprocal agreements are concluded between various participating states forming zone. The deliberations and the agreements are done under the auspice of Inter State Transport Commission (ISTC). The agreements ar revised|reviewed as and when necessary.

Passenger Vehicles

Passenger vehicles fleet in the public sector has increased to ove 82,259 in 1983 from 35,193 in 1970. About 4 crore commuters ar carried every day by the state transport undertakings which emplo about 5.70 lakh persons.

Transport Bodies

To ensure co-ordination between the Central and state policies an operation of the different modes of transport, the Government has se up a Transport Development Council. The Inter State Transpo Commission, a statutory body is responsible for the development co-ordination and regulation of road transport services on inter-stat routes. As a result of the efforts made by the Commission, almos all the states and union territories now have reciprocal arrangement for operation of goods and passenger service of inter-states route They have introduced zonal permit schemes for the unhindered movement of limited numbers of public goods carriers over the nationa and state highways on payment of tax at a single point.

As Association of State Road Transport Undertakings, set up i 1963, co-ordinates the activities of 58 state undertakings and helps t secure procedural uniformity, higher standards of service and economi operation.

TOURISM

In 1983, 13,04,976 tourists (including nationals of Pakistan an Bangladesh) visited India as compared to 12,88,162 in 1982. Th foreign exchange earnings from tourism were estimated at Rs 825 cror for 1983 as against Rs 750 crore in 1982. India's potential fo tourism is as vast as it is varied. While the infrastructure at hom is being strengthened, promotional activities are undertaken abroad t attract more tourists. With a view to diversifying tourist attraction development of beach and mountain resorts has been taken up.

A new approach to the planning of tourist infrastructural faciliti has been given by introducing the concept of travel circuits whereb facilities would be developed at tourist centres falling along identifie travel circuits.

With a view to attracting more tourists, publicity is undertaken in major tourist generating markets of the world through 25 tourist offices located in North America, Europe, Australasia, West Asia and East Asia.

ORGANISATION

The Department of Tourism of the Ministry of Tourism and Civil Aviation have both promotional and organisational functions and work in close co-operation with the India Tourism Development Corporation.

Publicity and marketing in the tourist generating markets is done through a network of regional offices abroad and at home. Regional offices are functioning in Bombay, Calcutta, Madras and Delhi with sub-offices at Agra, Aurangabad, Bangalore, Bhubaneswar, Cochin, Guwahati, Hyderabad, Imphal, Itanagar, Jaipur, Khajuraho, Lucknow, Panaji, Patna, Port Blair, Shillong, Trivandrum and Varanasi.

Overseas, India has tourist offices in New York, Los Angles, Chicago, Toronto, London, Geneva, Paris, Frankfurt, Brussels, Stockholm, Milan, Vienna, Kuwait, Bangkok, Tokyo, Singapore and Sydney. In addition tourist promotion offices are based at Dallas, Miami, San Francisco, Washington, Osaka, Melbourne, Dubai and Kathmandu. The various tourist offices abroad function under a scheme of close collaboration between the Department of Tourism and Air India for promotion of tourist traffic from the respective regions.

To feed promotional material to these offices, Indian embassies, Air India and the Department of Tourism produce tourist publicity literature in English, German, Spanish, French, Italian, Persian, Arabic, Japanese and Thai languages. In order to cater to domestic tourism literature in Hindi is also produced. Tourist offices maintain film and photo libraries on subjects of tourist interest.

ACCOMMODATION AND OTHER FACILITIES

The Department has constructed forest lodges in the bird sanctuary at Bharatpur and the wild life sanctuaries at Kaziranga, Sasangir, Jaldapara and Dandeli. The India Tourism Development Corporation is managing the forest lodges at Bharatpur, Kaziranga, Sasangir and Kanha Kisli and those at Jaldapara and Dandeli are being run by the State Tourism Development Corporations. The construction work of a forest lodge at Betla and expansion of the existing lodge at Ranthambore has been taken up.

Facilities are also provided for viewing wild life, such as boats at Bharatpur bird sanctuary, elephants at Kaziranga, Kanha and Palamau and mini-buses in some of the wild life sanctuaries.

To promote youth tourist (domestic|international), 18 youth hostels have been constructed in different parts of India which are already functioning. Nine more youth hostels are coming up in north eastern region.

For pilgrims, a Bharatiya Yatri Avas Evam Vikas Samiti was set up in November 1978. Yatrikas (Dharamshala/Musafirkhana) are to be constructed at pilgrim centres.

Snow skiing and water skiing are looked after by the Indian Institute of Skiing & Mountaineering, Gulmarg.

At present, the Department of Tourism has on its approved list 175 travel agents, 40 tour operators (wholesalers), 154 tourist transport operators and 425 functioning hotels with 30,799 rooms. Approval has been given to 226 hotel projects with a projected capacity of approximately 13,119 rooms.

To promote tourist traffic, regulations relating to currency exchange controls and customs have been liberalised. While visas are required by visitors from most countries, landing permit is given to organised groups handled by approved travel agents and to tourists travelling on compassionate grounds.

Concessional tickets for domestic tourists are issued by the railways for round-trip journeys and circular tours. Special concessions are given to students.

In rail pass facilities are available for foreign tourists and Indian residents abroad against payment in convertible currencies. The scheme—*Discover India* for travel on Indian Airlines domestic services with unlimited stopovers enroute is available to all persons permanently residing outside India, including Indians against payment in foreign exchange. The Indian Railways and Rajasthan State Tourism Development Corporation have jointly organised *Palace on Wheel* train in order to promote places of tourist interest in Rajasthan. In addition, a new fully air-conditioned train—*The Great Indian Rover,* has been introduced for promoting places of Buddhist interest. The train is also available for other tourist itineraries.

Indian Institute of Tourism and Travel Management

The Indian Institute of Tourism and Travel Management was set up in January 1983 with its registered office in New Delhi. The travel industry and management institutes are represented on the governing body. The Institute organises seminars, workshops on hotel management, restaurant management, tourism planning and on functional areas such as finance, marketing. etc.

Tourism Advisory Board

In order to consider. and recommend measures necessary for the promotion of tourist traffic to India from other countries and from one part of the country to the other, a Tourism Advisory Board has been constituted. The Board reviews the tourist trends and suggest appropriate measures.

India Tourism Development Corporation

Established on 1 October 1966, India Tourism Development Corporation (ITDC) is one of the prime movers in the progressive development and expansion of India's touristic infrastructure. It now operates India's largest accommodation chain—the Ashok Group, comprising nine hotels in Delhi and one each at Aurangabad, Bangalore, Hassan, Mysore, Jammu, Khajuraho, Patna, Bhubaneswar, Madurai, Udaipur, Jaipur, Calcutta and Varanasi and two beach resorts at Mamallapuram and Kovalam. It runs 12 travellers lodges at various tourist destinations and four forest lodges - one each at Sasangir, Bharatpur, Kanha and Kaziranga.

ITDC has a nation-wide transport system operating from 18 units from Guwahati and Calcutta in the east to Bombay and Aurangabad in the west. Its fleet mix consists of 268 vehicles as on 1 April 1984, which comprises air-conditioned and deluxe coaches, limousines and tourist cars. It has its own travel agency - Ashok Travels and Tours.

ITDC's cultural wing runs three sound and light shows at Sabarmati Ashram, Ahmadabad; Red Fort, Delhi and Shalimar Gardens, Srinagar besides organising entertainment programme for its hotels. ITDC provides shopping facilities to tourists through its nine duty free shops at Bombay, Calcutta, Delhi, Madras, Tiruchirapally and Trivandrum and one tax free shop at Ashok Hotel, New Delhi.

In pursuance of the joint venture scheme evolved by ITDC for setting up tourism projects in collaboration with the state governments state tourism development corporations, six projects have so far been taken up, one each at Guwahati, Puri, Ranchi, Bhopal, Itanagar and Pondicherry.

ITDC has taken up domestic consultancy assignments such as construction of Highway Tourist Complex at Khopoli, conversion of Shalini Palace into a hotel at Kolhapur, landscaping design at Sasaram, Maner Sheriff and Vaishali, and construction of a hotel at Cochin.

CIVIL AVIATION

The Directorate Central of Civil Aviation is responsible for operation of civil airports (excluding 4 international airports), provision of air navigation services, air traffic services, rescue and fire fighting services, and also for security of civil aviation, safety of aircraft operations, registration of aircraft, certifictaion of airworthiness of aircraft, licencing of air crews and airports, air services agreements with foreign governments and air transport matters.

The development of indigenous components and specifications for communication and navigational aids and modifications, if any, required in such aids is undertaken by the Radio Constructions and Development Units of the Civil Aviation Department.

The type certifications of civil aircraft and aeronautical equipment, development testing of aircraft material and components, laboratory investigation of inservice failures, prototype development of light aircraft gliders, sail planes and glider launching winches is undertaken by the Research and Development Directorate of the Civil Aviation Department.

Aircraft

As on 31 December 1983 there were 730 aircraft (including 110 Gliders) with current certificate of registration, out of which 277 had current certificate of airworthiness. During 1983 Indian aircraft flew on their scheduled services 9.77 crore km, carried 90.50 lakh passengers and 1,84,627 tonnes cargo and mail as against 8.46 crore km flown, 79.61 lakh passengers and 1,60,598 tonnes cargo and mail carried in 1982.

Airports

There were 87 civil aerodromes and 24 civil enclaves maintained by the Department of Civil Aviation as on 31 December 1983. In addition, there are many aerodromes controlled/owned/maintained by Ministry of Defence, state governments, public undertakings and private individuals and bodies.

Communication Stations

As on 31 December 1983 Aeronautical Communication Service was operating 91 aeronautical communication stations, 258 channels in aeronautical mobile service, 274 channels in aeronautical fixed service, 217 radio and radar navigational facilities and 9 channels for ground to air voice broadcast.

Air Transport

The scheduled air services to maintain domestic and international air transport are operated by two public sector corporations *viz.*, Indian Airlines and Air India both of which were established in 1953 under the Air Corporation Act, 1953. The fleet of Air India as on 31 October 1983 was 10 B-747, 3 Airbus A 300 and 5 B-707 and that of Indian Airlines was 10 Airbus, 25 B-737,12 HS-748 and 8 Fokker Friendship F-27. To provide air transportation to inaccessible areas in India, *Vayudoot* service was started in 1981, as a third level feeder air service connecting important outlying stations with stations on the Indian Airlines network. It is operating to 18 stations in the country.

India has air services agreement with 50 countries.

Flying Clubs There are 20 flying clubs managed privately at Hyderabad. Guwahati. Bombay, New Delhi, Vadodara, Trivandrum, Lucknow, Indore, Nagpur, Madras, Jalandhar, Coimbatore, Patiala, Amritsar, Banasthali Vidyapith Rajasthan, Hisar, Jamshedpur, Karnal, Raipur and Ludhiana. Five state government flying schools/training institutes are at Patna, Bangalore, Bhubaneswar, Calcutta and Jaipur.

Gliding Clubs There are nine gliding clubs at Ahmadabad, New Delhi, Pilani, Raipur, Nashik, Kanpur, Agra, Pinjore and Hyderabad. There are 7 gliding wings of the flying clubs at Amritsar, Jaipur, Patna, Jalandhar, Hisar, Patiala and Ludhiana. Besides, there is also a Government Gliding Centre, Pune, which is run by the Civil Aviation Department.

Training Centre The Civil Aviation Training Centre, Allahabad comprising of an aerodrome school and a communication school trains air traffic controllers (procedural and radar), communicaton operational and maintenance personnel. Ground training to pilot trainees is also provided. Fire Services Training Centre, Calcutta, trains rescue and fire fighting personnel.

Aircraft Personnel There were 3,265 civilian pilot's licences current as on 31 December 1983, out of which 1,800 were private pilot's licences, 4 private pilot's licences (helicopter), 350 commercial pilot's licences (aeroplane), 70 commercial pilot's licences (helicopter), 120 senior commercial pilot's licences, 700 airlines transport pilot's licences, 220 glider pilot's licences and one Private Pilot's Licence (baloon). As on 31 December 1983, 2,251 aircraft maintenance engineers, 287 air craft radio maintenance engineers, 52 glider maintenance engineers and 209 flight engineers were holding current licences.

International Airports Authority of India The International Airports Authority of India (IAAI) was set up in 1972 for the operation, management, planning, development of four international airports, namely Bombay (Santa Cruz), Calcutta (Dum Dum), Delhi (Palam) and Madras (Meenambakkam). The Authority develops and provides consultancy services in relation to planning and development of airports in India and abroad. At present airport projects worth Rs 260.48 crore are in progress in India and abroad.

METEOROLOGY

The India Meteorological Department, organised on an all India basis in 1875, is the national agency for providing service in the field of meteorology. Meteorological data are collected from over fourteen hundred observatories of different types and processed by the Department. The Department, along with the Indian Institute of Tropical Meteorology (IITM), Pune, conducts fundamental and applied research in different fields of meteorology, weather forecasting, meteorological instrumentation, radar meteorology, seismology, agricultural meteorology, hydrometeorology, satellite meteorology and air pollution. The IITM has been conducting cloud seeding experiments for producing rain artificially.

The Indian Institute of Astrophysics (IIA), Bangalore, the Indian Institute of Geomagnetism (IIG), Bombay, and the IITM, Pune, which were formerly a part of the India Meteorological Department, have been functioning as autonomous institutes since 1971. The IIA conducts research in solar and stellar physics, radio astronomy, cosmic radiation, etc. The IIG records magnetic observations and conducts research in geomagnetism.

Meteorological research is conducted at some universities and institutes, notably, the Andhra University, the Banaras Hindu University and the Cochin University and the Indian Institute of Technology, New Delhi and Kanpur, and the Indian Institute of Sciences, Bangalore

Meteorological and weather services are provided by the India Meteorological Department with headquarters at New Delhi and a functional office responsible for climatology and forecasting at Pune. There are five Regional Meteorological Centres at Bombay, Calcutta, Madras, Nagpur and New Delhi. The Department has a Positional Astronomy Centre at Calcutta which compiles and publishes the *Indian Ephemeris and Air Almanac* in English and *Rashtriya Panchang* in English, Hindi and 9 other Indian languages.

For better co-ordination with the state governments, meteorological centres have been set up at 12 state capitals, *i.e.*, at Ahmadabad, Bangalore, Bhopal, Bhubaneswar, Guwahati, Hyderabad, Jaipur, Lucknow, Patna, Srinagar, Trivandrum and Chandigarh. The Trivandrum Centre maintains liaison with the Thumba Equitorial Rocket Launching Station for meteorological rocket probes of the upper atmosphere. To render service to agriculturists, farmers' weather bulletins are issued daily since 1945 from Regional Meteorological Centres. These bulletins are also being issued by the Meteorological Centres at state capitals pertaining to their regions and give district-wise forecast of weather and warnings against adverse weather. The Department has also started Agrometeorological Advisory Services at Madras for Tamil Nadu, at Bombay for Maharashtra, at Calcutta for West Bengal, at New Delhi for Delhi region and at Bhopal for Madhya Pradesh. From these Centres meteorological advisory bulletins are issued to farmers once or twice a week in consultation with agricultural experts for their benefit.

The Department issues warnings against heavy rainfall, strong winds and cyclonic weather for the general public and a number of private and public organizations including aviation, Defence Services, ships, ports, fishing corps, mountaineering expeditions and agriculturists. Flood Meteorological Offices have been working at Ahmadabad, Bhubaneswar, Guwahati, Lucknow, Jalpaiguri, Patna, Hyderabad and Asansol in order to provide meteorological support to the Flood Forecasting Organizations of the Central Water Commission.

There are separate directorates of the Department to deal with agricultural meteorology, meteorological training, weather analysis over the Indian Ocean and Southern Hemisphere, instruments, hydrometeorology, satellite meteorology, aviation services, seismology, radiometeorology and meteorological telecommunications.

Cyclone Forecasts

Cyclone warnings to ports and ships are issued by Bombay, Calcutta, Vishakhapatnam, Bhubaneswar and Madras Offices. These are based on conventional meteorological observations from coastal and island observatories, ships in the Indian seas, coastal cyclone warning radars and cloud pictures received from weather satellites. Cyclone warning radar stations are located at Bombay, Goa, Calcutta, Madras, Karaikal, Paradeep, Vishakhapatnam and Machilipatnam. Weather satellite pictures are received through Automatic Picture Transmission Stations at Calcutta, Madras, Vishakhapatnam, Bombay, Pune, New Delhi, Guwahati and Bhubaneswar. A cyclone warning and research centre at Madras investigates problems exclusively relating to tropical cyclones.

Tourists' Meteorological Service

Tourism Departments at the Centre and the states have access to the records of the Meteorological Department for providing weather information of interest to tourists.

Tourist Meteorological Offices are being set up in various parts of the country to issue weather forecasts for the tourists. One such centre has been set up at Gulmarg in Kashmir.

Exchange of Data

Meteorological data are exchanged with many countries through high speed telecommunication channels. As part of India's co-operation with the World Weather Watch Programme of the World Meteorological Organization, a Regional Meteorological Centre and a Regional Telecommunication Hub function at New Delhi.

An Area Forecast Centre is also located in New Delhi under the plan of the International Civil Aviation Organization. This Centre analyses and prepares forecast charts for surface and upper air for the area 40°N 30°E to 40°N 125°E and 0°N 30°E to 0°N 125°E daily which are broadcast over RTH for the benefit of civil aviation and neighbouring countries.

INSAT Programme

The Indian National Satellite (INSAT-1B) was successfully launched on 30 August 1983 and the Main Data Utilization Centre at Delhi was geared up to make use of its products. Since 3 October 1983, the cloud imagery data transmitted by INSAT-1B are being received, processed and made use of for weather forecasting, particularly for prediction of formation and movement of cyclonic storms and issue of necessary warnings. There has been improvement in the warning services provided by the Department against tropical cyclones and other natural hazards with the use of INSAT pictures.

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22

COMMUNICATIONS

The history of modern postal system in India may be traced back to 1837 when postal services were thrown open to the public. The first postage stamp was issued in Karachi in 1852, though it was valid only in Sind. The Postal Department was set up in 1854 when about 700 post offices were already functioning in the country. The money order system was introduced in 1880, the Post Office Savings Bank started in 1882 and the Postal Life Insurance in 1884. The Railway Mail Service was started in 1907 and the Airmail Service in 1911.

After Independence, the communication services have made remarkable progress. The subscriber trunk dialling services introduced in 1960 are now in operation on 243.5 point-to-point routes, including group dialling and international routes. The overseas communication system connects India with almost all countries of the world.

The Posts and Telegraphs Board, which provides the postal and telecommunication services is one of the largest employers in the country. The number of persons (including extra departmental and industrial workers) employed by the Board as on 31 March 1983 was 9.36 lakh. For operational purposes, the country is divided into 15 telegraph circles, 16 postal circles, 17 posts and telegraphs civil circles, 5 posts and telegraphs electrical circles and 31 telephone districts. The Ministry of Communications through the Posts and Telegraphs Department also discharges certain agency functions *e.g.* collecting broadcast receiver licence fees, running Post Office Savings Bank. issuing National Savings Certificates and Postal Life Insurance policies and selling units of Unit Trust of India. In Delhi, Calcutta, and Bangalore, private car owners can pay their vehicle tax through specified post offices. It also sells application forms for examination conducted by the Staff Selection Commission and income tax return forms.

POSTAL
ERVICES

The number of post offices as on 31 December 1983 is 1,44,147 - 15,268 in urban areas and 1,28,879 in rural areas. On an average each post office serves 4,754 persons and covers an area of 22.80

sq km. In addition, 70,209 villages in the country were being served through mobile counter service facilities. The number of letter-boxes was 5,00,894 of which 4,26,117 were in rural areas. More than 99 per cent of the villages had been provided daily mail delivery service by 31 March 1983.

Post Offices in Backward Areas

Under the revised policy for opening of post offices in rural areas made effective from 28 August 1978, norms had been liberalised for opening of post offices in backward, hilly and tribal areas. The concept of hilly areas for opening of post offices under relaxed norms was, however, done away with in September 1981. Thus relaxation for opening of post offices is now applicable only to tribal and backward areas. A post office can now be opened in a *gram panchayat* village if there is no other post office within 3 km and the proposed post office is expected to yield an income equal to at least 25 per cent of the estimated cost. In villages which are not *gram panchayat* villages, an additional conditions of having a population of 2,000 persons is also required to be fulfilled. In tribal and backward areas a post office can be opened in *gram panchayat* villages if there is no post office within 3 km from the proposed post office and the proposed office is expected to yield an income equal to at least 10 per cent of the estimated cost. In villages which are not *gram panchayat* villages, besides income and cost condition, the proposed village or cluster of villages within a radius of 1.5 km should have at least a population of 1,000 persons or above for providing a post office.

During the Sixth Plan it is proposed to open 8,900 new rural post offices. Out of these 40 per cent are to be opened in backward and tribal areas.

Conveyance of Mail

The traffic mail has increased enormously in the country due to industrialisation and increase in population as well as in rate of literacy. The mail is carried both by surface and air. For surface mail, various modes of conveyance such as rail, road, transport runners, boats, camels, horses and cycles are used. All the principal cities connected by air are served direct and other cities are connected subsequently by surface.

Under the All Up Scheme, all inland letters, letter cards, post cards, registered letters and money orders are normally carried by air without surcharge.

Quick Mail Service

A new scheme called Quick Mail Service (QMS) was introduced in 1975. This service now covers all state capitals, headquarters of all union territories and important commercial towns. All unregistered articles bearing the Postal Index Number (PIN) of the destination and posted in special QMS letter boxes are covered by the scheme. Letters posted under the scheme are normally delivered next day. Within the states, the regional QMS connects most of the district headquarters to the state capitals. There are at present 45 national and 410 regional QMS centres in the country.

Foreign Mail Arrangements

India is a member of the Universal Postal Union (UPU) since 1876. It has postal communication facilities with 166 countries of the world. Both surface and air routes are used to despatch and receive postal articles.

India is also a member of the Asian Pacific Postal Union (APPU), a restricted postal union of 19 countries within the framework of UPU since 1973.

The frequency of air despatches varies from 1 to 10 a week depending on the quantum of mails and the availability of flights to the country concerned. India sends air mail despatches to 95 countries in the world. Frequency of surface despatches varies from daily despatches to the neighbouring countries to once a month and in a few cases to once a quarter or so, depending on the availability of sailings from Indian ports.

India is having money order service with 37 countries.

PIN Code

For efficient and correct handling of the growing volume of mail, a numerical postal address code, known as the Postal Index Number (PIN), was introduced in 1972. The code has six digits which helps to identify and locate every departmental delivery post office excluding branch post offices. The first digit indicates the region, the second the sub-region and the third the sorting district where as the last three digits indicate a particular delivery post office in the areas served by the sorting district.

Post Office Savings Bank

The Post Office Savings Bank (POSB) has completed hundred years of service to the people in 1982. With nearly 1.42 lakh post offices transacting savings business, the Post Office Savings Bank runs several saving schemes and had an investment of Rs 11,102 crore as on 31 March 1983. Nearly 90 per cent of the offices transacting savings bank business are located in rural areas.

Postal Life Insurance

The number of postal life insurance policies in force as on 31 March 1983 was 10,00,910 for a total sum assured of Rs 685.32 crore. During 1982-83 nearly 1,05,157 new policies were issued for a sum assured of Rs 108.44 crore. This shows an increase of about 16.08 per cent over the previous year, indicating the growing popularity of Postal Life Insurance.

Philately

The Posts and Telegraphs Department has been issuing special/commemorative postage stamps since 1931. During 1983, 36 such postage stamps were issued. Attractive stamps on Commonwealth Heads of Government meeting, India's freedom struggle, Bi-centennial of Man's first flight and Wild Life were much appreciated.

Three new Philatelic Bureaux were opened during 1983, one each at Vadodara, Dehra Dun and Panaji raising the total number of philatelic bureaux to 40 and that of philatelic counters to 135.

The Department participates in international exhibitions and organises exhibitions in the country, too.

TELECOMMUNICATIONS SERVICES

As on 31 March 1983, 38,573 telegraph services (including licensed telegraph offices working under Railways and Canal Administration) were working in the country. During 1982-83, 2,282 new combined telegraph offices were opened.

Telex Services

Telex services were available between 172 cities which have an installed capacity of 27,830 lines and 21,800 working telex connections. During 1983-84, 4 SPC telex exchanges with the latest electronic technology were commissioned at Delhi, Bombay, Calcutta and Madras.

Hindustan Teleprinters

The Hindustan Teleprinters Ltd., a public sector undertaking, wa established at Madras in 1960 to manufacture teleprinters and ancillary equipment. The company produced 8,150 units of teleprinter and other accessories during 1983-84. The company has alread assembled about 400 electric typewriters during 1983-84.

Telephone Services

Telephone services have seen multi-fold expansion over the years Starting with a small 50-line manual telephone exchange in 1881-8 in Calcutta barely five years after the invention of telephone in th world, the present size of the service has reached the order of abou 29.33 lakh lines (equipped capacity) located in 9,288 exchanges The bulk of this expansion has taken place only after Independence The country had a mere 82,000 telephone connections in 1947 locate in about 321 exchanges. Today about 8 lakh potential subscriber are waiting for the connections—about 25 per cent of the numbe of working connections.

Telecommunications Services

The growth of telecommunication services since Independence i shown in table 22.1.

TABLE 22.1
GROWTH OF TELECOMMUNICATIONS SERVICES

Sl. No.	Item	As on				
		1 April 1948	1 April 1978	1 April 1979	1 April 1980	1 Apri 1983
1.	Switching equipment capacity (lakh lines)	1·00	20·17	21·88	23·36	28·27
2.	Underground cables (lakh pair km)	N/A	99·88	107·82	117·48	145·80
3.	Direct exchange lines (lakh connections)	0·82	17·27	18·68	20·16	24·65
4.	Telephones connected to telephone systems (lakh numbers)	1·68	22·47	24·23	26·15	32·15
5.	Telephone Exchanges (numbers)	321	6,238	6,866	7,430	9,288
6.	Trunk Automatic Exchanges (numbers)	Nil	17	17	18	24
7.	Trunk Automatic Exchange lines (lines)	—	30,450	34,000	40,300	54,520
8.	Stations connected to TAX (numbers)	—	77	108	125	205
9.	Subscriber Trunk Dialling Routes (Point to Point) (numbers)	—	114	131	137	*189·5
10.	Telegraph Offices including combined offices (numbers)	3,824	17,905	21,711	24,457	30,761
11.	Telex Exchanges (numbers)	Nil	101	117	136	170
12.	Telex subscribers (numbers)	—	14,641	16,447	17,983	21,498
13.	Telex Capacity Lines (numbers)	—	19,865	21,025	22,015	26,100
14.	Long Distance public call Offices (numbers)	326	8,730	11,732	13,830	18,999

In the Sixth Plan, around 11.5 lakh telephone connections wil be added to the net-work.

Decision has been taken to instal manufacturing capacity of about 10 lakh electronic switching system in two factories. A large quantity of electronic switching equipment is also being introduced into the network. Introduction of electronic telex exchanges and electronic trunk automatic exchanges is also being done. The first digital electronic local exchange of E-10B type will be commissioned in Bombay during 1984-85, the last year of the Sixth Plan.

The domestic communication satellite INSAT-IB which was launched in August 1983 became fully operational in October 1983. Twenty-eight earth stations are connected to the satellite and these are providing telecomunication facilities to many far-flung areas in hilly and inaccessible locations, besides providing augmentation to the telecommunication services on the main routes in the country.

The P&T Department opened 532 telegraph offices and 592 public call offices in tribal areas during 1980-83.

STD Service

The Subscriber Trunk Dialling Service (STD) was first introduced in the country between Kanpur and Lucknow in 1960. It is now in operation in 296 cities. The facilities of STD have expanded considerably by introduction of Store Programme Controlled (SPC) Electronic Trunk Automatic Exchanges at Delhi, Bombay, Calcutta and Madras of more than 20,000 trunk lines.

Apart from STD Services, 8,400 Single Link Operator Dialling (SLOD), and 630 Multi-link Operating Dialling (MLOD) have also been established between various district headquarters to state capitals and the four metropolitan cities, namely, Delhi, Bombay, Calcutta and Madras. Also as a part of the programme for development of rural communication facilities, direct dialling facility has been established even from manual exchanges (MSTD) of even very small capacity of 10 lines, etc., to access the *taluka* and district headquarters from the villages. For facilitating telecommunication facilities within the district, Group Dialling Scheme has been introduced in many districts particularly in Andhra Pradesh, Tamil Nadu and Kerala, thus enabling one *taluka* subscriber to dial another *taluka* subscriber within the district without the assistance of the operator. Also a large number of public telephones (PT) have been given STD facilities for the convenience of public not having their own telephones.

International Subscriber Dialling (ISD) has been extended to Australia, Singapore, Hong Kong and France besides UK, from all the 4 metropolitan cities and the subscribers in these cities can directly dial their calls to these countries, without the help of any operator.

On Demand Trunk Service

Demand trunk service was introduced for the first time on Bombay-Bangalore route in 1971. Since then, the service has been extended to 948 trunk routes in the country.

Fully automatic telex subscriber dialling through SPC type electronic telex-exchanges have been installed at Calcutta and Madras, besides Bombay and New Delhi. These exchanges possess the capability of being booked on the national network. They have access to 101 countries of the world too.

Ship to Shore Service

P&T Department operates 13 coast stations at Bombay, Calcutta, Cochin, Goa, Kandla, Madras, Mangalore, Okha, Porbander, Port Blair, Ratnagiri, Tuticorin and Vishakhapatnam. These stations keep watch on international distress frequencies. Ship-to-shore radio telegram service is available from these stations. Long range hig frequency ship to shore service is available at Bombay, Calcutta and Madras under which subscribers can have telephonic contact with ships at sea within 750 km. In addition, short range very high freqency ship-to-shore service is also available at Bombay, Calcutta Madras and Cochin under which subscribers can have contact with ships at sea within 50 km of coast line.

Telephone Manufacture

The Indian Telephone Industries Ltd. (ITI), Bangalore is engaged in the production of a wide range of telecommunications equipment, catering to the needs of P&T Department, Railways, Defence and private customers. The undertaking has its registered and corporate office at Bangalore and five production units at Bangalore Naini, Palghat, Rae Bareli and Srinagar.

With the approval by the Government for setting up manufacturing capacity for 5 lakh equivalent lines of digital electronics switching equipment per annum at Mankapur in Gonda district of Uttar Pradesh, ITI would be entering into an era of electronic switching equipment in a big way. The unit is presently under execution and it is likely to produce the electronic switching equipment during 1985

The Government has also approved the expansion of the Palghat unit of ITI from the level of 10,000 equivalent lines to 1.5 lakh lines per annum by including manufacture of trunk automatic exchange equipment, rural automatic exchange equipment, private automatic exchange equipment, private automatic branch exchange equipment, etc.

During 1983-84, the turnover of the company was Rs 200.72 crore (provisional) against a turnover of Rs 182.05 crore during 1982-83. The company manufactured 5.85 lakh of telephone instruments during 1983-84 besides other telecommunication equipments including transmission equipment worth Rs 57.50 crore and many other equipments.

Telecommunications Consultants

The Telecommunications Consultants India Ltd. (TCIL) was set up in 1978 under the P&T Board for offering comprehensive service and technical know-how in all fields of telecommunications, including computerisation of telecom services and setting up of data-links. During 1982-83, the company secured 21 offers from abroad and 19 in India amounting to Rs 22.40 crore. At the end of March 1983, the total booking exceeded Rs 65 crore.

The company has executed/is executing contracts in Yemen Arab Republic, Kuwait, Jordan, Oman, United Arab Emirates, Libya, Iraq, Saudi Arabia, Nigeria, Somalia, Mozambique and Zimbabwe.

Telecommunications Factories

Four departmental telecommunication factories, set up at Bombay, Calcutta, Jabalpur and Bhilai, manufacture vital telecommunications equipment such as microwave towers, coin collecting boxes, pole line hardwares, trunk boards, manual boards, etc.

Telecommunications Research Centre

The Telecommunication Research Centre (TRC) is the research and development organisation of the telecom wing of P&T Department. Set up in 1956, TRC has progressively grown into a large organisation dedicated to the work of telecom development. TRC, amongst other activities, is assessing the future needs of telecommunication network in the introduction of appropriate new technology and also undertakes development of designs for indigenous fabrication of new systems. Some of the major achievements of TRC during the recent years is the successful completion of an extensive network of earth stations for satellite communication with system engineering by the engineers of P&T Department and also in the introduction of digital transmission network through radio links and modern means of transmission media such as optical fibre communication links.

With the advances in communicaion technologies and with the expanding access to and use of information, TRC has been actively engaged in conducting studies on introduction of data communication facilities through the telecommunication network so that the benefit of modern communication facilities could be extended to the society at an economical cost.

Considering the need for change over to the existing analog telecommunication network into digitally based systems, TRC has been actively engaged in the development of equipment and telecommunication systems using digital technology. Equipment incorporating latest technologies in pulse code modulation (PCM) technique and large capacity transmission media such as digital radio and optical fibre communication systems have been developed by extensive studies conducted during the recent years.

TRC has been engaged in development of small capacity electronic exchanges especially for rural applications. An exchange giving facility of direct dialling by subscribers into national telecom network has now been developed.

OVERSEAS COMMUNICATIONS SERVICE

India's external telecommunications services are operated by the Overseas Communications Service (OCS), a Department of the Ministry of Communications, with its headquarter in Bombay.

OCS operates from four international gateway centres located at Bombay, New Delhi, Calcutta and Madras and provides overseas telephone, telex, telegraph, radio-photo and private leased teleprinter and voice-grade circuits. International television relays *via* satellite are also provided. Broadcast transmission and reception of newscasts on behalf of news agencies is another facility provided. Almost 99 per cent of India's external telecommunications are handled by OCS *via* INTELSAT in the Indian Ocean region from the two OCS satellite earth stations at Arvi near Pune and Dehra Dun.

Submarine Cable and Troposcatter Links

A modern wide band submarine telephone cable link was established in 1981 between India (Madras) and Malaysia (Penang) providing essential diversity transmission medium to safeguard the security of India's external communications. A troposcatter communication link was established in 1981 between India and USSR.

SPC Electronic Gateway Exchanges

A major step in the development of the external telecommunications network was the commissioning of stored programme control (SPC) electronic gateway telephone exchanges at OCS gateway centres at Bombay, New Delhi and Madras in 1982. The availability of such modern large capacity exchanges has facilitated rapid improvement of international telephone service and expansion of international Subscriber Dialling (ISD) to many countries, which is at present available to Australia, Singapore, Hong Kong and United Kingdom. SP type electronic gateway telex exchanges already exist and IS is available to 101 countries at present.

International Net work

Through a network of satellite, submarine cable, high frequecucy radi and tropescatter communication facilities, telephone, telex, tel graph and a host of other services are provided practically to all par of the world by direct and switched circuits. India has direct telephon links with 42 countries, telex links with 43 countries and telegrap links with 37 countries. Traffic was carried over 896 telex circuits 759 telephone circuits and 49 telegraph circuits as on 1 January 198

Private Leased Circuits

OCS leases international voice grade circuits for telephone and dat services and teleprinters circuits to private parties like banks, air lines, business houses, industries, government departments, pres agencies, meteorological and civil aviation agencies for their bulk use Fifteen such leased voice grade circuits and 139 leased teleprinte circuits were in service as on 1 January 1984.

Programme Transmission

International programme transmission (voice cast) service is anothe facility extensively used by foreign broadcasting organizations an news agencies for sending live reports for broadcast on their hom radio and TV networks.

Press Bulletin Service

OCS provides leased teleprinter circuits at concessionary tariffs t press agencies (Press Bulletin Service) in line with Government' policy of encouraging free flow of information particularly amon developing countries of the third world. Twenty-three such PB circuits were in service as on 1 January 1984. OCS also provide facilities for broadcast transmission and reception of news on beha of news agencies. A multi-address broadcast is transmitted on beha of the Ministry of External Affairs, which is received by over 6 Indian consular posts around the world.

International TV relays

OCS provides international TV relay transmission and reception *vi* INTELSAT at both Bombay and New Delhi gateways. The service i becoming increasingly popular particularly during international event and VIP visits.

Development Plans

The establishment of a full-fledged gateway centre at Calcutta to serv the eastern region, with facilities comparable to the other three gateways, has top priority in OCS development plans. Plans for wide band submarine telephone cable between Bombay and Unite Arab Emirates, establishment of Coast Satellite Earth Station to wor with IN-MARSAT satellite to provide reliable round-in-clock communications, with ships at seas, are in an advanced stage.

WIRELESS PLANNING

The Wireless Planning and Co-ordination Wing of the Ministry o Communications is responsible for all matters concerning th International Telecommunication Union, Geneva, a specialised Unite Nations agency and the allied organisation. It also functions as th radio regulatory authority for all radio usages in the country and i that capacity assigns radio frequencies, conducts examinations fo radio amateurs and for certificates of proficiency for radio operator on board ships and aircraft, and issues operating licences to al official and non official wireless users. Cases of radio interferenc are investigated and resolved through national and, if necessary, through international co-ordination. Problems arising from radio frequency usages and assignment of positions in the geostationary orbit for communication satellite systems are co-ordinated by this wing both at national and international levels.

MONITORING

The monitoring organisation of the Ministry of Communications has a network of monitoring stations set up to support the work of frequency management and implementation of radio regulations. Twenty one such stations are functioning at Ahmadabad, Ajmer, Bangalore, Bombay, Bhopal, Calcutta, Darjiling, Delhi, Dibrugarh, Goa, Gorakhpur, Hyderabad, Jalandhar, Madras, Mangalore, Nagpur, Ranchi, Shillong, Srinagar, Trivandrum and Vishakhapatnam.

Four special units at Bombay, Calcutta, Delhi and Hyderabad investigate the quantum and sources of man-made radio noise which affect radio communications with a view to deciding on remedial measures.

Ten inspection units at Ajmer, Bangalore, Bombay, Calcutta, Delhi, Hyderabad, Jalandhar, Madras, Nagpur and Shillong carry out regionwise inspection of licensed and authorised radio stations to ensure that they conform to regulatory stipulations.

23 LABOUR

Labour policy in India derives its philosophy and content from t
Directive Principles of State Policy as enshrined in the country's Co
stitution. The Directive Principles enjoin equal pay for equal wor
provision of just and humane conditions of work and a living wage
all workers. Government's concern for the welfare of organis
sector of workers in the country, particularly after Independence,
evident from the fact that a large number of Acts in the field
social security, safety and welfare, etc., have been enacted after 194
While in the early years of industrialisation, labour policy was pr
occupied mainly with the organised sectors of the labour force, gro
ing attention is now being paid to the interests of workers in the u
organised sector without detracting from the concern of Governme
for the improvement of the real earnings and working conditions
those in the organised sector. Some Acts and rules have also be
framed for the unorganised sector. The Minimum Wages Act, 194
has been made applicable to many categories of workers in this secto

POPULATION

The working population of India in 1981 stood at 24.46 crore o
36.77 per cent of the total population of the country. In the organi
ed sector of India's economy, the largest number of workers a
employed in factories[1]. In 1980, the estimated average daily emplo
ment in working factories, for which figures are available, stood
79.17 lakh.[2]

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[1] Under the Factories Act, 1948, a factory is defined as 'any premises includi
the precincts thereof where 10 or more workers are working or were working o
any day of the preceding twelve months and in any part of which power is used fo
the manufacture. Where power is not used, the number of workers should be 2
or more.'

A 'worker' is defined in the Act as a person employed directly or through an
agency including a contractor whether for wages or not, in any manufacturin
process, or in cleaning any part of the machinery or premises used for a manufactur
ing process or in any other kind of work incidental to or connected with the manu
facturing process or the subject of the manufacturing process.

[2] Provisional.

Maharashtra had the largest number of factory workers (12,34,823) followed by West Bengal (9,04,686), Tamil Nadu (6,43,264), Gujarat (6,35,671) and Uttar Pradesh (5,33,952). The average daily number of workers employed in all mines in 1978 was 7,41,777 (3,10,170 below ground, 2,06,121 open-cast working, 2,25,486 above ground). The corresponding figure for coal mines covered by the Mines Act, 1952 for 1978 was 4,80,592.

The distribution of working population, according to activity and sex, is given in table 23.1.

TABLE 23.1 WORKING AND NONWORKING POPULATION (1981 CENSUS)

(*In lakh*)

Category	MALE		FEMALE		TOTAL	
	Number	Percentage share in total male population	Number	Percentage share in total female population	Number	Percentage share in total population
Working Population						
Total (A+B)	1,810	52·65	636	19·77	2,446	36·77
A. Total Main Workers	1,775	51·62	450	13·99	2,225	33·45
(i) Cultivators	776	22·56	149	4·65	925	13·91
(ii) Agricultural labourers	347	10·10	208	6·46	555	8·34
(iii) Household industry	56	1·64	21	0·64	77	1·16
(iv) Other workers	596	17·32	72	2·24	668	10·04
B. Marginal Workers	35	1·03	186	5·77	221	3·32
C. Total Non-working Population	1,629	47·35	2,578	80·23	4,207	63·23
D. Total Population (A+B+C)	3,439	100·00	3,214	100·00	6,653	100·00

Note : 1. Totals may not necessarily tally due to rounding. The percentage figures for different items are based on the respective figures before rounding.

2. Excludes Assam where census could not be held in 1981. After including the projected population of Assam the total population of India works out to 68·52 crore.

WAGES, ALLOWANCES AND BONUS

Earnings

The average per capita annual earnings of factory workers in different states and union territories are given in table 23.2

The variation in money earnings is shown in table 23.3

India and applies to persons employed in any factory including the establishments declared as factories under the Factories Act, 1948 and in any railway and in industrial establishments such as tramway or motor transport service, air transport service, dock, inland vessel, mine, quarry or oil-field, plantations, workshops in which articles are produced, and establishment in which any work relating to the construction, development or maintenance of buildings, roads, bridges or canals, etc., is being carried on.

Regulation of Wages

The payment of wages is governed by the Payment of Wages Act, 1936 and the Minimum Wages Act, 1948, as amended from time to time. The Payment of Wages Act, 1936 extends to the whole of

TABLE 23.2
AVERAGE PER CAPITA ANNUAL EARNINGS OF FACTORY WORKERS

(In Rs)

State/Union Territory	1975	1976	1978	1979	1980[1]	1981
Andhra Pradesh	2,824	3,731	3,625	4,884	3,625	3,481
Assam	2,627	3,504	4,673	4,717	4,505	5,899
Bihar	2,158	5,262	5,527	5,480	5,481	5,761
Gujarat	2,749	4,793	5,645	6,437	8,803	7,447
Haryana	3,371	4,931	5,664	6,248	5,320	8,098
Himachal Pradesh	2,745	4,395	3,636	4,691	4,745	4,745
Jammu and Kashmir	2,843	2,087	3,400	3,186	3,176	3,178
Karnataka	2,893	3,042	NA	4,936	4,936	4,936
Kerala	2,947	5,253	4,936	5,696	5,696	6,948
Madhya Pradesh	3,942	6,378	7,391	7,065	7,964	8,295
Maharashtra	3,459	5,680	7,210	7,165	7,154	8,762
Orissa	4,194	5,417	6,119	7,414	6,728	7,497
Punjab	3,089	3,675	4,285	5,069	5,149	5,643
Rajasthan	3,325	4,954	5,811	6,382	5,811	5,811
Tamil Nadu	2,543	4,817	5,388	4,305	4,205	6,845
Tripura	2,453	2,251	3,630	5,007	3,001	3,630
Uttar Pradesh	3,054	4,486	5,418	5,983	5,418	5,418
West Bengal	3,966	5,840	6,970	7,283	7,967	8,304
Andaman and Nicobar Islands	3,300	2,831	3,620	4,602	2,827	2,187
Delhi	3,239	5,092	5,528	5,491	5,892	6,035
Goa, Daman and Diu	3,792	5,965	5,715	5,853	10,587	11,523
Pondicherry	2,615	4,879	5,473	5,978	7,945	8,694
ALL INDIA	3,158	5,125	6,068	6,144	6,387	7,049

1. Provisional.
2. The data given in the table relate to workers earning less than Rs 400 per month upto 1975 and from 1976 onwards relate to workers earning less than Rs 1,000 per month.
3. The figures relating to factory workers exclude those for railway workshops and goups of industriess easonal in character consisting of food, beverages, tobacco and construction but include defence installations.
4. NA means not available.

TABLE 23.3
INDEX OF MONEY EARNINGS OF WORKERS

	Base 1961=100								Base 1976=100		
	1968	1969	1970	1971	1972	1973	1974	1975	1976	1977	1978
General Index of Earnings	160	170	180	185	199	210	207	207	100	112	118

The Act applies only to those who are in receipt of wages which average below Rs 1,600 per month.

Employers cannot withhold the wages earned by workers nor can they make any unauthorised deductions. Payments must be mad before the expiry of a specified day after the last day of the wage period. Fines can be imposed for only those acts of omission which have been approved by the appropriate government and must no exceed an amount equal to three per cent of the wages payable. I the payment of wages is delayed or wrongful deductions are made, the workers or their trade unions can file a claim. The payment of overtime in scheduled employment is governed by the Minimum Wages Act, 1948.

Minimum Wages Act

The Minimum Wages Act, 1948, empowers the Government to fix minimum wages of employees working in specified employments. It provides for review and revision of minimum wages already fixed after suitable intervals not exceeding five years. However, the Labour Ministers' Conference in July 1980 recommended that the revision of minimum wages should be made within two years or on a rise of 50 points in the Consumer Price Index, whichever is earlier.

Working Journalists Act

The Working Journalists and other Newspaper Employees (Conditions of Service) and Miscellaneous Provisions Act, 1955, regulates the conditions of service of working journalists and other persons employed in newspaper establishments. By a specific provision of this Act, the provisions of the Industrial Disputes Act with certain modifications have been applied to working journalists. The Act was amended by an ordinance on 26 July 1981 to provide for amplification of the definition of the term 'working journalist', so as to include part-time correspondents; and prevention of dismissal|discharge|retrenchment of newspaper employees (including part-time correspondents) by newspaper establishments in order to avoid payment of wages as revised by Central Government.

The amendment was given retrospective effect from 13 August 1980. The ordinance was subsequently replaced by an Act of Parliament which received President's assent on 18 September 1981.

Palekar Tribunals

Government appointed two tribunals under the provisions of the Working Journalists and other Newspaper Employees (Conditions of Service) and Miscellaneous Provisions Act, 1955 to recommend rates of wages in respect of working journalists and non-journalist newspaper employees in February 1979 headed by D. G. Palekar, retired judge of the Supreme Court. The tribunals submitted their recommendations to the Government on 13 August 1980.

Government had accepted the recommendations of the tribunals except those relating to the dearness allowance. A formula, with minor modifications and orders to this effect, was published. The dearness allowance formula recommended by the tribunals, was finally modified by the Government after giving the opportunity to everyone concerned to present their opinion. Orders notifying the revised rates of dearness allowance were published on 20 July 1981.

A Committee of Ministers was appointed to oversee the progress of implementation of recommendations and problems relating to implementation. The Committee had several meetings and gave necessary directions to the concerned authorities. The Committee has now been replaced by a tripartite committee. The state governments have also been requested to consider the setting up of similar tripartite committees at state levels.

Contract Labour

The Contract Labour (Regulation and Abolition) Act, 1970, which became applicable to the whole of India in February 1971, provides for the regulation of employment of contract labour in certain establishments and for its abolition in certain circumstances. It fixes responsibility on the principal employer for payment of wages in case of defaults.

Equal Remuneration

With a view to giving effect to the Constitutional provisions as well as to ratify the ILO Convention No 100, the Equal Remuneration

Ordinance, 1975 was promulgated on 26 September 1975. The Ordinance was replaced by the Equal Remuneration Act, 1976. The Act provides for the payment of equal remuneration to men and women workers for the same work or work of similar nature and for the prevention of discrimination against women in matters of employment.

The Act has been enforced throughout India and has been extended to various trades and establishments including plantations (as covered under the Plantations Labour Act, 1951), local authorities, Central and state governments, banks, educational institutions, mines, hospitals, manufacture of textiles and textile products, wholesale and retail trade, construction, agriculture, air transport, industry, community, social and personal services, etc.

Bonded Labour

The bonded labour system has been abolished all over the country with effect from 25 October 1975 through the Bonded Labour System (Abolition) Act, 1976. On the enforcement of the Act all bonded labourers stood freed and discharged from any obligation to render any bonded labour and their debts liquidated. Rehabilitation of bonded labourers so released form part of the 20-Point Programme.

The Act is being implemented by the state governments concerned. The incidence of bonded labour system has been reported from 11 states *viz.* Andhra Pradesh, Bihar, Gujarat, Karnataka, Kerala, Madhya Pradesh, Maharashtra, Orissa, Rajasthan, Tamil Nadu and Uttar Pradesh. Upto February 1984, 1,62,637 bonded labourers had been identified and freed; of them, 1,23,194 have been rehabilitated either under the Centrally sponsored scheme or under the on-going schemes of the state governments.

Implementation of rehabilitation schemes is being continuously monitored and reviewed by the Ministry of Labour.

Bonus

The right to a share in the profits of a concern was conferred on the workers under the Payment of Bonus Act, 1965. The Payment of Bonus (Second Amendment) Act, 1980 provides for payment of a minimum bonus of 8.33 per cent or Rs 100 whichever is higher, irrespective of whether there is allocable surplus or not. Bonus up to a maximum of 20 per cent of the annual wages is payable under this law in accordance with a prescribed formula. Bonus may be paid under a different formula linked to production/productivity in lieu of allocable surplus by mutual agreement between employers and the workers. Payment under any other formula would, however, be contrary to the law. The Act is not applicable to public sector enterprises except those operating in competition with similar undertakings in the private sector; it is also not applicable to institutions not working for profit like the Reserve Bank of India, Life Insurance Corporation of India and departmentally managed undertakings. All banks are, however, covered.

Under Section 32(iv) of the Payment of Bonus Act, 1965, the employees employed by an establishment engaged in any industry carried on by or under the authority of any department of the Central Government or a state government or a local authority stand excluded from the purview of the Act. However, it has been decided to pay productivity linked bonus to the employees of the Railways, Post and Telegraph Department, certain defence establishments, and a few other such organisations. While schemes for payment of productivity linked bonus have been drawn up in the case of the Railways and Post and Telegraph Department, in other cases schemes are yet to be evolved.

Occupational Wage Surveys

Occupational wage surveys are conducted by the Labour Bureau at periodic intervals to collect occupational data on wage rates and earnings in important manufacturing, mining and plantation industries in the country. The first and second surveys (both covering 44 industries) were conducted during 1958-59 and 1963-65 respectively. The third survey covering 81 industries, including all the 44 industries covered by the first two surveys, was conducted in four phases spread over the period 1974–79. Brochures on dearness allowance and statutory bonus in respect of all the 81 industries have been released. As regards main reports giving occupational wage rates and earnings, the reports on 3 plantation industries, 9 mining industries, mica factories, tea factories and 4 textile industries covered during the first two phases of the survey (1974-75) have been released. Seven analytical notes on workers' earnings in 67 manufacturing industries covered during the second, third and fourth phases of the survey have been released for limited official use.

INDUSTRIAL RELATIONS

The Industrial Disputes Act, 1947 is the principal central legislation which provides a machinery for the settlement of industrial disputes. In addition, the Code of Discipline (1958) and the Industrial Truce Resolution (1962) also help in the promotion and maintenance of good industrial relations.

Industrial Employment Standing Orders

Model rules were framed by the Government under the Industrial Employment (Standing Orders) Act, 1946 for adoption by the industrial establishments employing one hundred or more workers to ensure industrial peace. An amendment of the Act in 1961 empowered the appropriate Government to extend it to establishments employing less than hundred workers.

Another amendment in 1963 made the model standing orders, framed by the appropriate Government, operative in all industrial establishments covered by them until the standing orders framed by the industrial establishments are certified. The Government by notification on 19 May 1982 extended the Industrial Employment (Standing Orders) Act to all industrial establishments under the control of the Central Government for which it is the appropriate Government and all mines, wherein fifty or more but less than hundred workers are employed.

The Act now applies to all establishments in Andhra Pradesh, Gujarat, Maharashtra and West Bengal employing fifty workers or more. In Assam, it covers establishments (except mines, quarries, oil-fields and Railways) which employ ten workers or more. In Tamil Nadu all factories under the Factories Act, 1948 are covered.

Works Committees

Works committees have been set up in industrial establishments employing one hundred or more workers. They comprise equal number of representatives of employers and workmen and aim at promoting measures for securing and preserving amity and good relations between the two parties. On 31 December 1983 Works Committees were functioning in 583 establishments.

Management

Workers' participation in management has been in vogue in this count for the last over thirty years in one form or the other. There is provision for statutory bipartite works committees at the plant lev under the Industrial Disputes Act. The scheme for voluntary joi management council at the plant level was tried for some years b it did not meet with much success. There is a provision for t appointment of worker-directors in the nationalised banks and a volu tary scheme for worker-directors in selected public undertakings whe there is a duly recognised union and the labour-management relatio are cordial.

In October 1975, Government introduced a voluntary scheme fo workers' participation in management in manufacturing and minin industries employing 500 or more workers. This scheme was followe in January 1977 by another scheme for workers' participation i commercial and service organisations employing at least 100 person the latter scheme was, however, confined to public sector. The schem provided for the establishment of shop councils and plant councils wit distinct functions assigned to them.

The Government have since reviewed the working of the earlie schemes on workers' participation and in the light of the review an experience gained so far, introduced on 30 December 1983 a ne comprehensive scheme for workers' participation in Central publi sector undertakings.

Code of Discipline

The Code of Discipline, requiring employers and workers to utilise th existing machinery for the settlement of disputes and avoiding direc action was evolved at the Indian Labour Conference in 1958. It ha been accepted by all the central organisations of employers and worker and several others.

The implementation organisations, at the Centre and in the states assist in settling disputes. The central organisations of employer and workers and public sector undertakings, except the Al India Trade Union Congress have set up committees or cells to scree cases for dissuading their affiliate members from filing appeals in highe courts against the judgments of lower courts like industrial tribunal labour courts, etc., in keeping with the letter and spirit of the code A similar procedure for screening cases of appeals proposed to b filed by central undertakings has been in operation since 1964.

The Code is also applicable to public sector undertakings run a companies and corporations except those under the Ministry of Defenc and Railways and also Ports and Docks. The Department of Defenc Production has agreed to apply the Code, with some clarifications, t its public sector undertakings run as companies and corporations. Th Code has also been applied, with certain modifications to the insuranc industry, the State Bank of India and the Reserve Bank of India.

Industrial True

To ensure industrial truce during emergency in the country, a Industrial Truce Resolution was adopted by the central organisation of employers and workers in 1962. It laid down that there woul be no interruption or slowing down of production: on the other hand the production will be maximised and defence effort promoted in al possible ways. A standing committee, set up in August 1963 to revie the working of the Truce Resolution, has since been merged with th Central Implementation Evaluation Committee.

National Arbitration Promotion Board

Both the Code of Discipline and Industrial Truce resolution lay particular emphasis on the settlement of disputes through voluntary arbitration. Almost all the state governments and union territory administrations have either set up Arbitration Promotion Boards or made some other institutional arrangements to popularise voluntary arbitration.

Grievance Procedure

Under the Code of Discipline, managements have to establish a procedure to ensure full investigation of disputes to help in their settlement. The central industrial relations machinery persuade managements to set up grievance procedure in undertakings falling in the central sphere.

Lay off and Retrenchment

In order to prevent avoidable hardships to the employees and to maintain higher tempo of production and productivity, the Industrial Disputes Act, 1947, has been amended to prevent lay-offs and retrenchments. Under the new Act, known as the Industrial Disputes (Amendment) Act, 1976, reasonable restrictions have been put on an employer's right to lay-off, retrenchment and closure. Now the employer has to seek prior approval of a specified authority or the appropriate government stating clearly in the application the reasons for laying off, retrenchment and closing of industrial establishment where 300 or more workers are employed. The provisions with regard to closure in the amendment act are not operative as a result of the Supreme Court judgment in Excel Wear *versus* Union of India case 1978.

The position has now been set right by the Industrial Disputes (Amendment) Act, 1982, in which the relevant section has been redefined. The amendment act is yet to come into force.

Conciliation and Adjudication

The central industrial relations machinery, known as the Central Chief Labour Commissioner's Organisation, is responsible for the prevention, investigation and settlement of industrial disputes under the Industrial Disputes Act, 1947. It also enforces some labour laws in the central sphere.

When industrial disputes cannot be resolved by mutual negotiations, the conciliation machinery steps in. It is compulsory for the conciliation officer to hold conciliation proceedings when an industrial dispute exists or is apprehended in a public utility service and a notice under Section 22 of the Industrial Disputes Act, 1947 has been received, but it is optional in the case of other industrial establishments.

The Industrial Disputes Act also provides for voluntary or compulsory adjudication of industrial disputes. Nine Industrial Tribunals-cum-Labour Courts have been set up to adjudicate disputes in the central sphere. Of these, three are at Dhanbad, two at Bombay and one each at Calcutta, Jabalpur, Delhi and Chandigarh. The states have their own tribunals and labour courts. The Tribunal-cum-Labour Court at Calcutta and one of the Industrial Tribunal-cum-Labour Courts at Bombay are functioning as national tribunals.

National Labour nstitute

The National Labour Institute was set up by the Government on 11 February 1972 under the Societies Registration Act. It became operative on the 1 July 1974 as an autonomous institute. The education and training programmes of the institute are primarily designed to benefit labour administrators of Central and state governments engaged in the field of conciliation, labour welfare, enforcement of labour laws, etc., leaders and office-bearers of trade unions, organisers of rural poor, leaders of the agrarian workers' unions and managers and supervisors of public and private sector industries.

The National Labour Institute has been engaged in carrying out certain designed educational activities for different categories of rural poor/labour since 1975. One of these activities is to organise rural labour education training camps. Fortyfive such camps have been held in different parts of the country covering approximately 2,500 participants. These camps have helped them to grapple with the problems confronting their day-to-day life in a better way.

WORKERS EDUCATION

The Central Board for Workers Education was set up in 1958 with the main object of organising educational programmes designed to provide instructions to the workers in trade union consciousness and in the management of trade union and allied matters. On a review of the working of the programme, the objectives of the Board have now been broadened. The present objects are mainly to equip all sections of workers for their intelligent participation in social and economic development of nation, to develop among them a greater understanding of the problems of their social and economic environment, to promote leadership from the rank and file of workers, to enable trade unions themselves to take over ultimately the functions of workers' education.

The Board is a society registered under the Societies Registration Act, 1860. It is a tripartite body comprising representatives of workers, employers and Government both Central and states. The Board has its headquarters at Nagpur with 43 regional centres and 18 sub-regional centres spread all over the country. The Board is financed entirely by the Government.

The programmes of the Board are conducted at national, regional and unit levels. At the national level the training is imparted to candidates selected after a countrywide advertisement for employment as education officers under the Board. The refresher courses are held for the officers of the Board and the trade union leaders. At the regional level the workers from different establishments sponsored by trade unions and released by employers are trained by the education officers at the regional centres. At the unit level the worker-teachers conduct classes for the rank and file of workers. Residential facilities have also been provided at 14 regional centres for worker-teacher trainees and rural worker educators.

The Board started the programme of training workers from small scale industries|unorganised sector from September 1980. It also expanded its activities for spreading functional adult literacy among the workers.

Leadership development programme of one month duration which aims at training leadership qualities among the participants has been started. In order that the courses at the unit level are need based and are of short duration, subject based short term courses of 15 days have been evolved.

In keeping with the Revised 20-Point Programme, the Board has evolved educational programmes to cater to the needs of the weaker sections of the community. These programmes are being conducted vigorously. The scheduled caste and scheduled tribe workers have been participating in various training programmes of the Board. Women have also been participating enthusiastically in the rural workers' education programmes.

The Board gives grants-in-aid to the extent of 90 per cent of the total admissible expenditure to the trade unions for conducting short programmes of 1–14 days' duration.

RADE UNIONISM

Labour protests on an organised scale were not unknown in India prior to the First World War (1914–18). Organised action by workers was reported in the first fourteen years of this century in many parts of the country; in some it was in response to the demand of the workers, in others the motive was political.

The establishment in 1919 of the ILO had its influence on the growth of unions in the country. While some unions chose to operate independently and confined their activities to an industrial centre/unit, others felt the need for co-ordination of their activities at the national level. A section of the Indian working class thought in terms of the even wider international unity of the working class through the opportunity offered by the ILO. The formation in 1920 of an all-India federation, *viz,* the All India Trade Union Congress, was the result of all these urges. The passing of the Trade Unions Act, 1926 gave a formal recognition to the workers' right to organise.

rade Unions ct

The Trade Unions Act, 1926 provides for the registration of trade unions. Any seven or more members of a trade union may, by subscribing their names to the rules of the trade union and otherwise complying with the provisions of the Act with respect to registration, apply for registration of the trade union under the Trade Unions Act. The Act gives protection to registered trade unions in certain cases against civil or criminal action.

lembership of rade Unions

Verification of membership of central trade union organisations for the purpose of giving representation on tripartite consultative bodies, development councils, boards, etc., at national and international levels, including International Labour Organisation is done by the office of the Chief Labour Commissioner. The last general membership verification, as on 31 December 1968, of unions affiliated to four central trade union organisations, *viz.,* INTUC, AITUC, HMS and UTUC was undertaken during 1969.

With the emergence of new trade union organisations claiming all-India character and membership strength, it was decided to undertake verification of membership, as on 31 December 1977 and 31 December 1979, of unions affiliated to 10 central trade union organisations, viz., (i) Indian National Trade Union Congress (INTUC), (ii) All India Trade Union Congress (AITUC), (ii) Hind Mazdoor Sabha (HMS), (iv) United Trade Union Congress (UTUC), (v) Centre of Indian Trade Unions (CITU), (vi) Bharatiya Mazdoor Sangh (BMS), (vii) United Trade Union Congress (UTUC) (LS), (viii) National Front of Indian Trade Unions (NFITU), (ix) Trade Union Coordination Centre (TUCC) and (x) National Labour Organisation (NLO).

However, verification could not be undertaken in the absence of consensus amongst the central organisations of workers. On account of strong differences in their views. the Government evolved a procedure. Accordingly, the 10 central organisations were addressed for submission of their claims as on 31 December 1980 for the purpose of general verification. All the central organisations except AITUC and CITU submitted their claims. Membership figures of unions, affiliated to AITUC and CITU were collected from the records of th Registrar of Trade Unions. The general verification work initiated in November 1981 has since been completed and provisional results declared (See table 23.4). The final results are being compiled.

TABLE 23.4
MEMBERSHIP OF CENTRAL TRADE UNION ORGANISATIONS (PROVISIONAL)

S. No.	Central Organisations	Claimed		Verified	
		No. of Unions	Membership	No. of Unions	Membership
1.	INTUC	3,457	35,09,326	1,604[1]	22,36,128
2.	CITU	1,737[2]	10,33,432[2]	1,474	3,31,031
3.	BMS	1,725	18,79,728	1,333[1]	12,11,345
4.	AITUC	1,366[2]	10,64,330[2]	1,080	3,44,746[1]
5.	HMS	1,122	18,48,147	409	7,35,027
6.	NLO	249	4,05,189	172	2,46,540
7.	UTUC	618	6,08,052	158	35,384
8.	UTUC (LS)	154	12,38,891	134	6,21,359
9.	NFITU	166	5,27,375	80	84,123
10.	TUCC	182	2,72,229	63	14,570
	TOTAL . . .	10,776	1,23,86,699	6,507	58,60,253

[1] The figures do not include the membership figures of one union of the INTUC in the Post and Telegraph Department and 13 unions of the BMS as objections have been raised in this regard. A final decision will be taken after further examination of the issue.

[2] The figures shown as claimed membership of AITUC and CITU have been obtained from the records of respective Registrars of Trade Unions as these unions had not submitted the figures.

SOCIAL SECURITY

Workmen's Compensation Act

A beginning in social security in India was made when Workmen's Compensation Act was passed in 1923 providing for the payment of compensation to workmen and their families in case of industrial accidents and of certain occupational diseases arising out of and in the course of employment and resulting in death or disablement. The Act has prescribed separate scales of compensation for death, permanent total disablement and temporary disablement. It now covers workers employed in certain specified hazardous occupations and drawing wages not exceeding Rs 1,000 per month except those who are covered under the Employees State Insurance Act, 1948.

Maternity Benefits

The next step was taken up by the then Bombay Government when it enacted a law on maternity benefits in 1929. Soon after other states (Known as provinces) enacted laws on the subject. In order to bring uniformity in maternity benefits available under different state governments, Government passed the Maternity Benefit Act in 1961 replacing the state Acts on the subject.

The Maternity Benefit Act, 1961, regulates the employment of women in certain establishments for certain periods before and after child birth and provides for maternity and other benefits. The Act applies to mines, factories, circus industry and plantations including any such establishments belonging to Government except the employees who are covered under the Employees State Insurance Act, 1948. It can be extended to other establishments by the state governments. There is no wage limit for coverage under the Act.

Employees' State Insurance Scheme

The passing of the Employees State Insurance Act, 1948 marks the most important step in the provision of social security benefits. Till recently it covered non-seasonal factories using power and employing 20 or more persons but now it is being gradually extended by the state governments to smaller factories, hotels, restaurants, shops, cinemas, etc., employing 20 or more persons. It covers employees drawing wages not exceeding Rs 1,000 per month.

The Act provides for medical care in kind and cash, benefits of maternity, employment injury and pension for dependents on the death of a worker because of employment injury. Full medical care including hospitalisation is also being progressively made available to the members of the family of the insured persons.

As on 31 December 1983 there were 84 ESI hospitals and 42 annexes with 22,552 beds and 1,167 dispensaries under the scheme. The number of employees covered was about 63.02 lakh.

Employees' Provident Funds

Retirement benefits are available to the employees under the Employees' Provident Funds and Miscellaneous Provisions Act, 1952. As on 30 September 1983 it covered 173 industries/classes of establishments, employing 20 or more persons all over India, except Jammu and Kashmir. The Act does not apply to establishments registered under the Co-operative Societies Act, 1912 or under any other law relating to co-operative societies employing less than 50 persons and working without the aid of power. The scheme is at present applicable to those drawing wages up to Rs 1,600 per month.

The employees contribute 6.25 per cent of the basic wages and dearness allowances including cash value of food concessions and retaining allowance payable to the employees. The employers make a matching contribution. The Government has enhanced the rate of contribution to 8 per cent in respect of 108 industries employing 50 or more persons.

As at the end of 30 September 1983 the number of subscribers under the scheme was 125.74 lakhs. The total amount of provident fund contributions received was Rs 9,572.60 crore while the total amount refunded was Rs 4,932.28 crore.

Death Relief

A Death Relief Fund was set up under the Employees' Provident Fund Scheme in January 1964, with a view to affording financial assistance to the nominees of heirs of deceased members of unexempted establishments whose pay (including basic pay, DA, etc.,) does not exceed Rs 1,000 per month at the time of death. The quantum of benefit is restricted to the amount by which amount payable on account of provident fund falls short of Rs 1,250.

Employees' Deposit Linked nsurance cheme

Another important social security measure, the Employees' Deposit Linked Insurance Scheme, 1976 was introduced for the members of the Employees' Provident Fund and the exempted Provident Funds with effect from 1 August 1976. On the death of a member, the person entitled to receive the provident fund accumulations would be paid an additional amount equal to the average balance in the provident fund account of the deceased during the preceding three years, if such average balance was not below Rs 1,000 during the said period. The maximum amount of benefit payable, under the scheme, is Rs 10,000 and the employees do not have to make any contribution

Family Pension

To provide long-term financial security to the families of industria employees in the event of their premature death, the employees' Family Pension Scheme was introduced from 1 March 1971 by diverting a portion of the employers and employees' contribution to the Employees' Provident Funds with an additional contribution by the Central Government. The amount of family pension payable ranges from a minimum of Rs 60 to maximum of Rs 320 per month depending on the period of membership of the fund.

Gratuity Scheme

The Payment of Gratuity Act, 1972 is applicable to employees in factories, mines, oil-fields, plantations, ports, railways, motor transport undertakings, companies, shops and other establishments under the Act. The employees drawing wages not exceeding Rs 1,000 per month are entitled to payment of gratuity at the rate of 15 days wages for each completed year of service, subject to a maximum of 20 months' wages. However, in the case of seasonal establishments, the gratuity is payable at the rate of 7 days' wages for each season. The Act does not affect the right of an employee to receive better terms of gratuity under any award or agreement or contract with the employer.

WORKING CONDITIONS AND WELFARE

Working conditions in factories are regulated by the Factories Act, 1948, which prescribes a 48-hour week for adult workers and forbids the employment of children under 14 in any factory. Minimum standards of lighting, ventilation, safety, health and welfare services which the employers must provide in their factories have also been laid down. Factories employing over 30 women workers are required to provide a creche for their children. Shelters, rest rooms and lunch rooms are to be provided by factories employing over 150 workers. Factories with more than 250 employees have to provide canteens for their workers. Factories employing 500 employees or more workers have to appoint welfare officers. Amenities have also been provided in mines and plantations covered by the Mines Act, 1952, and the Plantations Labour Act, 1951, and the Bidi and Cigar Workers (Conditions of Employment) Act, 1966, Contact Labour (Regulation and Abolition) Act, 1970, Motor Transport Workers' Act, 1961, etc.

To provide housing, medical, recreational and other welfare facilities on a planned basis, statutory welfare funds have been created for the benefit of workers in coal, mica, iron ore, manganese ore, limestone and dolomite mines and in the *beedi* industry. The welfare facilities provided under these funds include provision of housing, hospitals, medical, educational and recreational facilities.

The finances for the funds are raised through the levy of a cess an *ad valorem* cess as customs duty on mica exports, a cess as a duty on export of iron ore and manganese ore and duty of excise on internal consumption and a cess on the limestone and dolomite consumed by the iron ore and steel plants and cement and other factories. The welfare fund for *beedi* workers is being financed by levy of cess on manufactured *beedies*.

Acts under which funds have been established are : The Iron Ore Mines and Manganese Ore Mines Labour Welfare Cess Act 1976; Iron Ore Mines and Manganese Ore Mines Labour Welfare Fund Act, 1976; the Limestone and Dolomite Mines Labour Welfare Fund Act, 1972; Coal Mines Labour Welfare Funds; the Mica Mines

Labour Welfare Fund Act, 1946; and the Beedi Workers' Welfare Cess (Amendment) Act, 1981.

tation Labour

The Plantation Labour Act, 1951 provides for the welfare of plantation labour and regulates the conditions of work in plantations. The Act is administerd by the state governments. The Act was passed in 1951 but was brought into force from 1 April 1954. Even from this date only such sections of the Act were given effect to which could be enforced without framing of rules. The concerned state governments published their rules under the Act from September 1955 to April 1959, on the lines of model rules recommended by the Ministry of Labour.

With a view to removing some difficulties that have been experienced in the working of the Plantations Labour Act, 1951 and for enlarging the scope of the Act, the Plantations Labour (Amendment) Act, 1981 was passed by Parliament and has been brought into force with effect from the 26 January 1982.

The Act applies to whole of India except Jammu and Kashmir and covers all tea, coffee, rubber, cinchona and cardamom plantations measuring 5 hectares or more and employing 15 or more workers. Workers drawing wages up to Rs 750 per month are now covered under the Act. The Act now provides for compulsory registration of plantations.

Under the Amendment Act, all plantations have to provide housing accommodation to their resident workers and their families and also to those residing outside who have put in six months of continuous service and who express a desire in writing to reside in the plantations. The plantations also maintain hospitals and dispensaries for workers. Some of the plantations also run elementary schools for the education of the workers' children. Training in useful handicrafts, such as tailoring, knitting, weaving and basket-making and recreational facilities are provided in some of the tea estate centres with the help of the Tea Board.

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Since the Factories Act, 1948 is the main labour legislation concerning conditions of work and since the conditions of work in factories are constantly changing due to rapid advances in the manufacturing technology, there is a dire need to train the enforcing authorities at the field level so that the enforcement of the provisions under the Factories Act is done with due consideration for such changes. With this in view, the Directorate General, Factory Advice Service and Labour Institute, conducts training programmes for factory inspectors, medical inspectors and other specialist inspectors. Courses for new inspectors as well as senior inspectors and specialist inspectors are conducted on a regular basis. The inspectors are also deputed by their respective Inspectorates to attend certain specialised courses offered by various industries.

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The Factories Act, 1948 contains provisions to ensure safety measures and to promote the health and welfare in factories. It also provides for the appointment of safety officers in notified factories and in factories engaged in operation involving risk of bodily injury, poisoning or disease. The Act and the rules framed thereunder are administered by the state governments through their factory inspectorates.

Under the Constitution, safety, health and welfare of workers employed in mines are the concern of the Central Government. The matter is regulated by the Mines Act, 1952, which applies to all types of mines including those of atomic minerals and oil-fields.

The Directorate General of Mines Safety has been entrusted with the function of enforcing the provisions of the Mines Act, 1952, and the rules and regulations framed thereunder. The National Council for Safety in Mines is a registered society engaged in safety activities.

The Dock Workers (Safety, Health and Welfare) Scheme, 1961 framed under the Dock Workers (Regulation of Employment) Act, 1948 provides for measures for ensuring the health and welfare of dock workers and safety measures for those workers who are not covered under the Indian Dock Labourers Regulations, 1948.

The Directorate General, Factory Advice Service and Labour Institute, Bombay function as an integral body to advise Government, industry and other interests concerned with matters relating to safety, health and welfare of industrial workers.

National Safety Council

The National Safety Council was set up in 1966 to promote safety measures to prevent accidents, minimise dangers and mitigate human sufferings, to conduct programmes and lectures and conferences on safety, to conduct educational compaigns to arouse consciousness amongst employers and workers, to collect educational and information data, etc. As on 31 December 1983, the Council's membership of 1,606 consisted of 1,366 corporate members, 131 individual members, 31 trade union members and 78 life members.

The National Safety Day is celebrated every year throughout the country to mark the foundation day of the National Safety Council.

National Safety Awards

To give recognition to good safety performance on the part of industrial undertakings and to stimulate and maintain the interest of both the managements and the workers in accident prevention programmes, the Government instituted in 1965 the National Safety awards. The award schemes were instituted for factories registered under the Factories Act, 1948, but from 1971, separate schemes for factories not covered under the Act and for ports have also been introduced. At present ten schemes are in operation.

Sharam Vir Awards

Sharam Vir awards were instituted in 1965 for workers of factories, mines, plantations and docks. They are given in recognition of meritorious performance which leads to higher productivity or economy or efficiency.

EMPLOYMENT

Employment in the organised sector, *i. e.* in all the public sector concerns and non-agricultural establishments employing ten or more persons in the private sector increased from 234.9 lakh in March 1982 to 239.8 lakh (provisional) in March 1983, an increase of 2.1 per cent as compared to 2.7 per cent during 1981-82. The increases in public and private sectors employment during 1982-83 were 3 per cent and 0.1 per cent respectively as compared to 3 per cent and 2 per cent in the preceding years.

The Sixth Plan document presents estimates of unemployment in March 1980 on the basis of provisional results of the 32nd round